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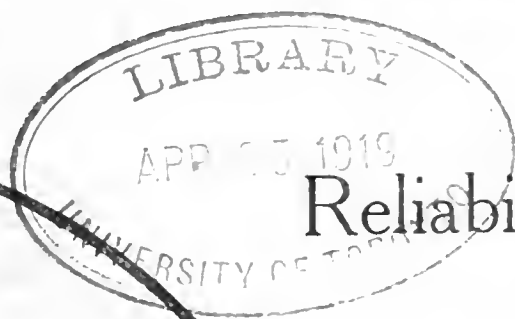
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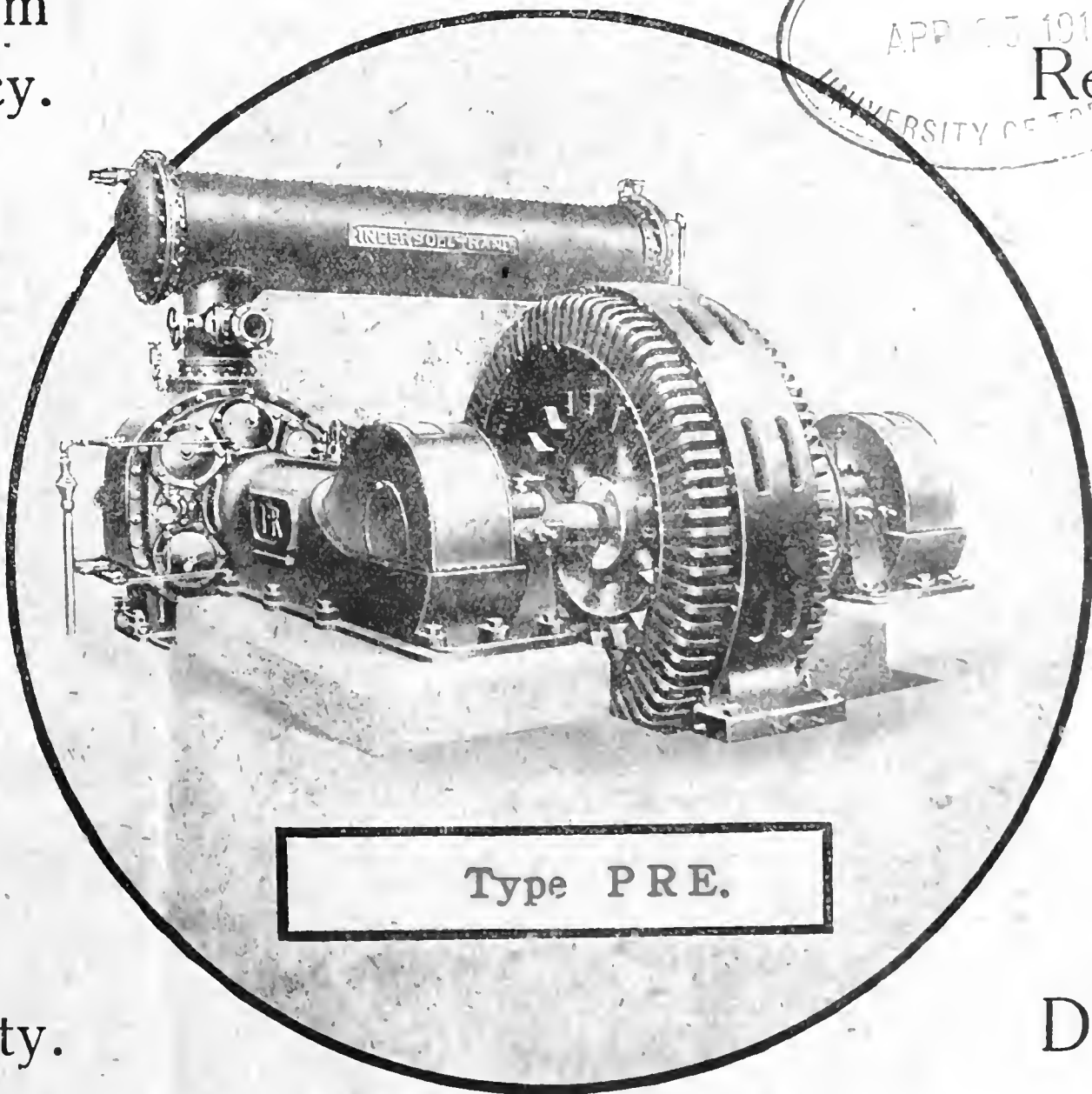
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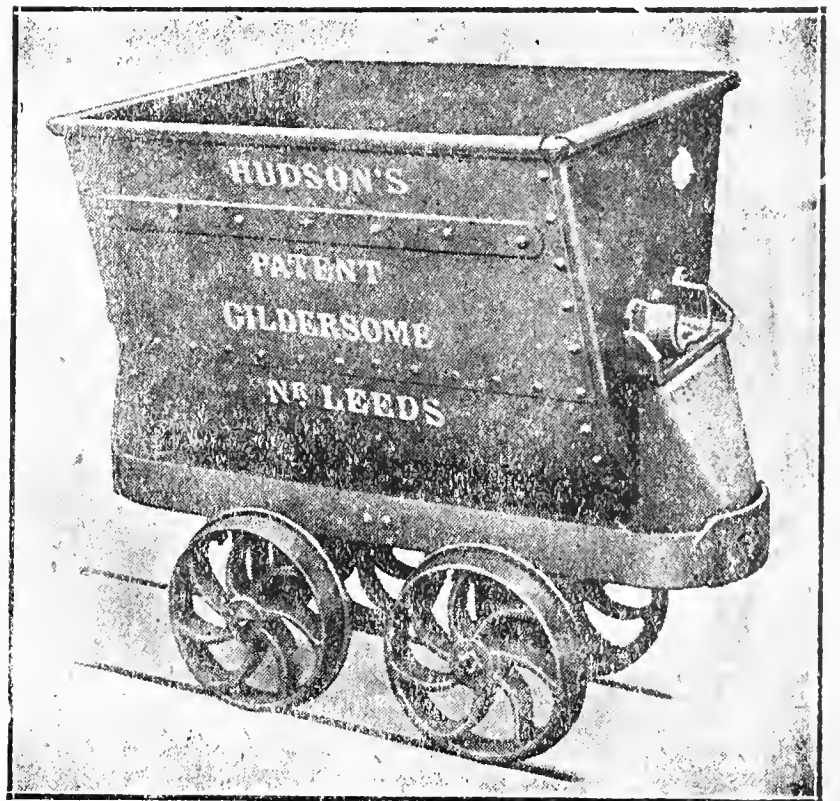
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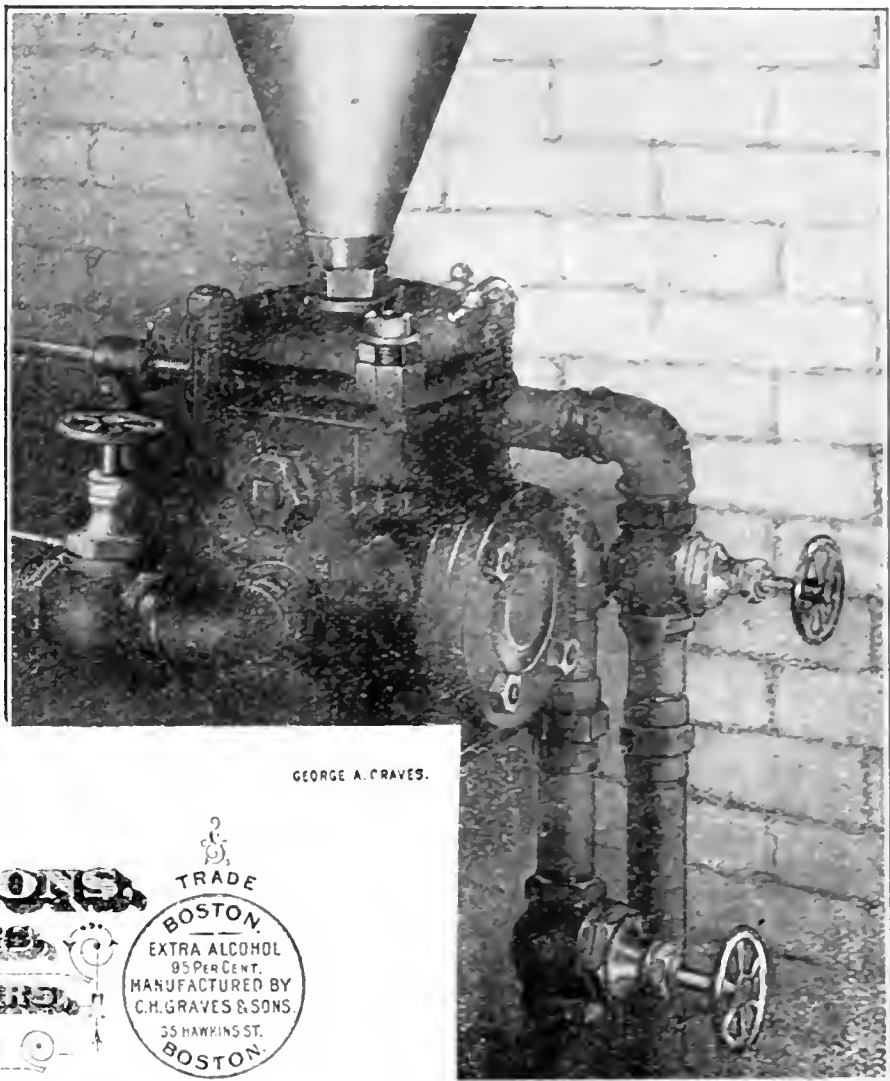
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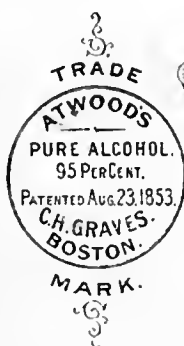
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GOVERNMENT NOTICE NO. 1714 OF 1917

TENDER

FOR THE WORKING OF THE

EBENEZER DIAMOND MINE

IN THE FAURESMITH DISTRICT OF THE ORANGE FREE STATE.

NOTICE IS HEREBY GIVEN that, in terms of the Ordinance of the Mining of Precious Stones (Orange River Colony) (Ordinance No. 4 of 1904), the Government is prepared to receive tenders for the lease of the exclusive right to mine for precious stones the whole of the Ebenezer Diamond Mine, in the Fauresmith District of the Orange Free State.

Every tender shall be in writing and must be in the hands of the Assistant Head of the Mines Department, Bloemfontein, Orange Free State, not later than noon on the 17th day of February, 1918, and must be marked on the outside "Tender, Ebenezer Diamond Mine."

The consideration to be quoted by the applicant is payable to the Government shall take the form of a monthly licence fee for each claim.

Each applicant must deposit, along with his application, the sum of two hundred and fifty pounds (£250). This deposit will be returned to every unsuccessful applicant but in the case of the successful applicant will be retained by Government and be liable to forfeiture should such applicant fail, within two months after registration of the contract, to satisfy the Government by bank guarantee or otherwise that he is in possession of sufficient capital for working the mine. Upon the Government being so satisfied the amount of the deposit will be refunded.

The amount of capital that shall be regarded as sufficient for the proper working of the mine shall be thirty thousand pounds (£30 000).

A written contract shall be entered into with the Government within two months of the date of notification of acceptance of tender, and shall be subject to the undermentioned conditions and shall contain such other terms and conditions as may be agreed upon between the Government and the successful tenderer, hereinafter termed the contractor.

The contract shall be in the form of a notarial agreement, and all costs in connection therewith, together with the transfer duty provided by section three of Ordinance No. 12 of 1906 of the Orange River Colony, shall be payable by the contractor.

Any further particulars may be obtained at the Office of the Assistant Head of the Mines Department, Bloemfontein.

The Government does not bind itself to accept the highest or any offer.

CONDITIONS.

1. The contract shall continue until it is cancelled under clause 6 hereof, or is abandoned under clause 4 hereof.
2. The consideration payable shall be the amount tendered by the contractor per claim per month, payable in advance.
3. The contract shall, in addition, be subject to any taxes payable under the Income Tax (Consolidation) Act, 1917 (No. 41 of 1917).
4. The contractor may abandon all his rights under the contract by giving one month's notice to the Head of the Mines Department, Orange Free State, of his intention so to do, but will remain liable for the licence moneys due under clause No. 2 hereof up to the end of such month.
5. The contractor shall be bound during the term of the contract to carry on digging or mining operations to the satisfaction of the Minister of Mines and Industries.
6. Should the contractor fail to pay the licence moneys, as provided in clause No. 2 hereof, within one month of the due date thereof or to carry on digging or mining operations in terms of clause No. 5 hereof, after receiving three months' notice from the Minister of Mines and Industries, or should he fail to satisfy the Government within a period of two months from the date of the registration of the contract that he is in possession of sufficient capital for working the mine, the Governor-General may forthwith cancel the contract, and all rights granted hereunder shall thereupon cease and determine.
7. The contract may not be assigned by the contractor without the approval of the Governor-General.
8. The contractor shall be entitled, on abandonment or forfeiture of this contract and provided all licence money due have been paid to the Government, to remove his plant and any other property belonging to him on the mining area, and shall be compelled to do so within three months after receiving notice from the Minister of Mines and Industries, failing which the Government may remove or dispose of it at its discretion and at the expense of the contractor.
9. The right hereby granted to work the Ebenezer Diamond Mine shall be subject to the provisions of Ordinance No. 4 of 1904 (Orange River Colony) and any amendment thereof.

H. WARINGTON SMYTH.

Secretary for Mines and Industries

Department of Mines and Industries,
Pretoria, 10th December, 1917.

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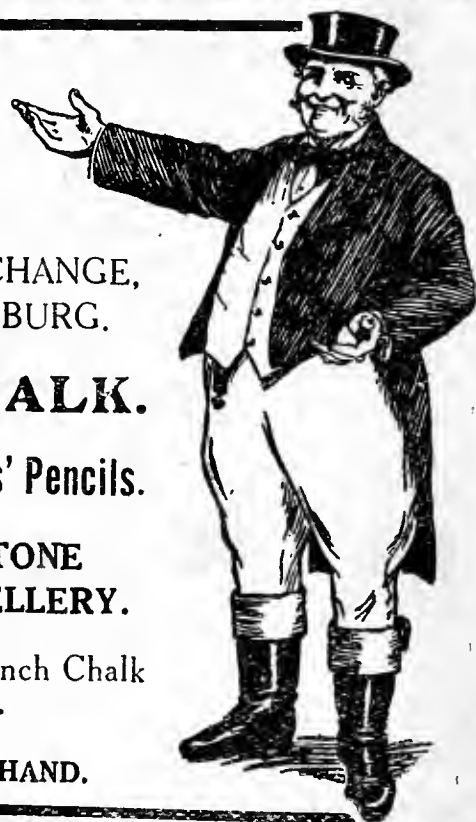
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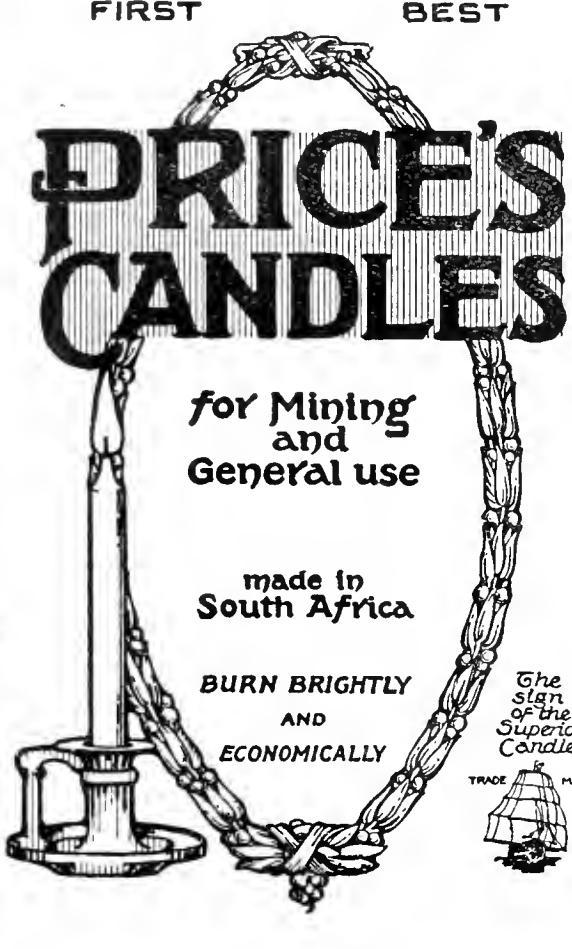
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Notice of Extraordinary General Meetings.

NOTICE IS HEREBY GIVEN that an EXTRAORDINARY GENERAL MEETING of the above Company will be held in the Board Room, Consolidated Building, Johannesburg, on WEDNESDAY, the 27th day of FEBRUARY, 1918, at 12 o'clock noon, for the purpose of considering and, if deemed fit, of passing, in the manner required for the passing of an Extraordinary Resolution, Resolutions to the following effect:—

1. Placing the Company in voluntary winding-up.
2. Appointing Liquidators, defining their powers and fixing their remuneration.

AND NOTICE IS HEREBY GIVEN that a further General Meeting of the Company will be held at the same place, on FRIDAY, the 22nd day of MARCH, 1918, at 12 o'clock noon, for the purpose of receiving a report of the proceedings of the first above-mentioned Meeting, and of confirming as Special Resolutions all or any of the Resolutions passed thereat.

The Share Registers of the Company will be closed from the 21st day of February to the 27th day of February, 1918, inclusive, and from the 16th day of March to the 22nd day of March, 1918, inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT CO.,
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per FRANK HALL.

Head Office,
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Notes and News.

In response to the request of the Chamber of Mines and of various interests representing the Far East Rand, the Government, we understand, has decided to re-introduce the Mining Leases Bill in an amended form during the coming session of Parliament. The Bill will doubtless be published immediately, and should have the effect of greatly stimulating interest in the still dormant areas of the Far East.

The gold output for Southern Rhodesia for November was declared this week at 65,815 ozs., value £275,829, a decrease of 3,293 ozs. compared with October. Matabeleland contributed 35,615 ozs., value £144,558 and Mashonaland 31,170 ozs., value £131,271. The value of base minerals for the month was £45,719.

The general manager and staff of Messrs. Fraser & Chalmers held an informal reception to their numerous business friends last Saturday forenoon to signalise the advent of the firm to the new offices in Farrar Buildings. A large gathering of mining company directors, consulting engineers, and mine managers assembled to wish the firm well in its new home, and the general manager, Mr. W. H. Haig, was congratulated on all sides upon the transformation that had been effected to make the upper portion of the Farrar Buildings into one of the best equipped and most modern suites of offices in town.

In a paper read before a recent meeting of the American Institute of Chemical Engineers, J. F. Bucher claims to have devised an economical process for manufacturing cyanide by causing atmospheric nitrogen to act on a mixture of sodium carbonate, graphite, and powdered iron at comparatively low temperatures. In his experiments, nitrogen was passed over briquets made of soda ash, coke, and powdered iron, in equal proportions, without binding medium, at a temperature not exceeding 920° C., in a "batch" furnace. At the end of half an hour the briquets contained 30 per cent. NaCN. Considerable quantities are formed even below 820° C. Air, producer gas, flue gas, or combustion gases give as good results as nitrogen. Iron must be present.

In the record of the development of the mineral resources of "German" East Africa there is nothing sensational, and it is only during the last decade that any serious attempt has been made to ascertain what those resources are, says the *Cape Times*. The concessions granted to various prospecting companies led to mineralogical exploration in a number of likely localities, and at present it is known that the country possesses gold, both quartz and alluvial, lead, copper, iron, mica, graphite, coal, bitumen. Gold has been located chiefly in the Muansa and Tabora districts, bordering on the Victoria Nyanza. The principal mine is at Sekenke, owned by the Kirona Goldminengesellschaft, and this has been working since 1906. From 1909 to 1913 gold was exported to the value of £131,841. About 100 tons of mica have been exported annually for some years from the Uluguru Mountains. The lead ore is in the vicinity of Kondoa Irangi, while copper has been located at Massassi. Iron appears to be general in the Muansa, Ujiji and Tabora districts. Coal has been located on the border of Lake Nyasa. Bitumen is found on an island at the northern end of Lake Tanganyika, and salt exists in several districts, notably in the Iringa area. Germany can only be said to have made a good beginning with regard to the exploitation of the mineral wealth, and

further systematic mineralogical exploration will be required before it will be possible to prophesy with safety as to the possibilities of the mineral deposits.

* * * *

The coal output for November amounted to 896,455 tons, a decrease of 14,853 tons as compared with October. The Transvaal output was 599,277, an increase of 2,867 tons; Cape, 474 tons, a decrease of 19 tons; Free State, 68,011 tons, a decrease of 3,733 tons; and Natal, 228,693 tons, a decrease of 13,968 tons. The Transvaal and Cape shipped 166 tons of tin, valued at £27,532; and 4,012 tons of copper, valued at £207,432. The silver output was 76,020 ozs., valued at £10,725, a decrease of 1,146 ozs. The labour returns show that 31,780 whites and 258,421 coloured were engaged in mining throughout the Union at the end of November, the former figure being a decrease of 47, and the latter a decrease of 1,915.

* * * *

The Consul-General of the United States in Capetown has received the following communication from the authorities in Washington: The **U.S.A. Shipping Regulations.** President, by his proclamation of November 28, prohibited the importation of a number of commodities except under licence granted by the War Trade Board to American importers, to be presented when making entry into the United States. Licences need not be procured before shipment, and in practically every instance will be issued to the importer upon application where the transaction does not violate the Enemy Trading Act. If a licence is refused in any case, the goods will not be re-exported, but forwarded to general stores, and disposed of by importers according to the War Trade Board's instructions. The purpose is not to exclude from the United States commodities covered by the proclamation, but to control shipments, and insure their application to the most urgent national uses. There is no reason to believe that the industries of South Africa will be adversely affected.

* * * *

Dr. A. L. du Toit has prepared a report on the Saldanha Bay phosphates, which has been published by the Geological Survey. By way of **Saldanha Bay Phosphates.** introduction, he writes:—

"Though the existence of the peculiar phosphorite rock on the Peninsula at Hoedjes Bay appears to have been known for a number of years to certain of the residents there, it was not until 1897 Mr. S. B. Mills came across the deposit and had a sample of it analysed by Dr. R. Marloth that its true nature became apparent. In searching around for a larger body of this material, Mr. Mills discovered, about two years later, at Hoedjes Bay, on the farm Kreefte Baai, the more widely spread but mineralogically different phosphates that form the subject of this Report. In 1907 two samples were received from Saldanha Bay by the Government Analyst, Dr. C. F. Juritz, and were chemically examined in the laboratory, these being the first analyses to be published. (Report of the Senior Analyst, Cape of Good Hope, for 1907, p. 103.) One, a phosphorite, contained 34.41 per cent. of total phosphoric oxide; and the other, a phosphate of alumina and iron, 27.5 per cent. In 1909, further specimens having been received, ten samples were analysed by Mr. E. V. Flack, F.C.S. (Report of the Senior Analyst, Cape of Good Hope, for 1909, p. 159), which, with the exception of one of phosphorite having 34.47 per cent. of phosphoric oxide, were of the second type with phosphoric oxide ranging up to 27.5 per cent. and lime up to 7.75 per cent., but the last named being generally much lower in amount. In 1911 several additional samples were chemically examined. Not having visited the locality, no pronouncement as to the habit and mode of origin of these rocks could be made, except to point out that they fell into two distinct groups, composed of phosphates of lime and phosphates of aluminium and iron respectively. In 1909, Mr. S. B. Mills located similar aluminous phosphate rocks west of Langebaan village, on the flanks of Constable Hill, on the farm Oude Post. In 1912, Dr. Marloth visited the various deposits, and in a confidential report discussed the chemical nature of the phosphates, their extent and commercial possibilities, more especially in the case of the widespread aluminous types, samples of which contained from 20 to 29 per cent. total phosphoric oxide. Experimenting upon the possibility of overcoming the drawback that the phosphoric oxide was combined almost wholly with alumina and iron, and therefore practically insoluble in a solution of ammonium citrate, he evolved and patented a process for its conversion into the soluble condition, as will be described later on. In 1914, Mr. E. C. Langley, one of the Inspectors of Mines, and the Author, visited Hoedjes Bay, in

order to acquire a knowledge of the nature of the deposits in connection with their proposed development, while early this year the writer was enabled to pay a second visit and to examine the deposits at Oude Post also. After a period, in which negotiations were conducted with a view to Governmental assistance in development, extended by the war and other causes, the Saldanha Bay Phosphates Company, Ltd., was able to commence operations by setting up a mill at Hoedjes Bay, and have made a start in the manufacture of fertilizers by turning out the rock phosphate in a finely ground but otherwise untreated condition."

* * * *

The aims of the new Factory Bill, to be introduced in the coming session, are threefold. It proposes to place all factories under a system of registration and inspection. Secondly, it places limitations upon the hours of employment and of overtime, and provides against the employment of juvenile labour. Finally, it proposes to legislate against practices which in the past have been found to result in sweating. In all these matters the Bill proceeds broadly on the lines which have already been found to work well in other countries. In future no factory may be established unless it has complied with the requirements of the law, and every factory will be liable to periodic inspection by officers who will be armed with ample powers for the examination of premises. The right of appeal to the Minister is allowed in cases where the factory owner or intending manufacturer may consider that the inspector has been unduly critical, but there is no reason to suppose that the best type of employer will object to a system which ensures that all factories shall comply with certain conditions of sanitation and decency. As long as no Factory Act was in existence the danger to the fair employer was that others would compete by unfair means, taking full advantage of the defects in the law which at present allow factories to grow up at haphazard without regulation and without complying with requirements which have been recognised as essential to decent conditions of employment all over the world. This applies with equal cogency to the proposed regulation of hours of labour. All employers will in future be required to keep careful records of the number of their employees, the character of the work of each employee, and the wages paid in each class. A standard week's work not to exceed fifty hours is prescribed for employees over the age of sixteen with a maximum of 9½ hours a day. It is further provided that in no case shall an employee work for a longer period than five hours continuously without an interval of at least 45 minutes for rest or a meal. In the case of all females and of males under sixteen the maximum week is limited to 45 hours, with a daily maximum of eight hours and a continuous working period of 4½ hours. Overtime is similarly restricted.

* * * *

The high cost of glycerine is making inventors look around for cheaper substitutes for dynamite,

Possible Substitutes for Dynamite. and some believe that there is a prospect of securing such an explosive in

nitrostarch. *Coal Age* states that it is claimed for that explosive that it is insensitive to shock and that it can only be exploded by a fulminate detonating cap. Fire will not explode it. It is believed to be adaptable to a wide range of uses, and when reasonably well compounded and handled with ordinary care, it will not produce fumes that are injurious. For many purposes, the lightness of the explosive, when it is not specially compacted, is in its favour. It is alleged that changes of temperature do not affect it as they do dynamite, and that it does not absorb water. With all these good qualities, it is believed that it can be made not only more cheaply than any other explosive, but at the same time that it will be reasonably stable. Nitrostarch has the advantage of being more bulky than dynamite unless artificially compressed, and when powdered, wetting will render it temporarily inert. Nitroglycerine has held its own for a number of years, but it is quite possible that it will be superseded by cheaper, safer, and less injurious explosives. The field is large and will repay careful investigation. Whether nitrostarch is the coming mine explosive depends partly on the length and duration of its flame, details that apparently have as yet not been the subject of careful experimentation.

TOPICS OF THE WEEK.

THE ECONOMICS OF AN IRON AND STEEL INDUSTRY.

A most exhaustive account of the economics of a South African iron and steel industry is contributed by Prof. Stanley to the current number of the *Journal of Industries*. Prof. Stanley, it will be remembered, in collaboration with Dr. Wagner, contributed an important report on the iron ores of the Pretoria town lands to our columns some time ago, and his papers on the possibilities of iron and steel making in this country, read before the scientific societies, reflect his study of, and deep interest in, the question. Oddly enough, Prof. Stanley does not mention the progress being made at the works of the Transvaal Blast Furnace Co., Ltd., at Vereeniging, the explanation doubtless being that the Vereeniging project was launched since the paper was prepared. Nevertheless, Prof. Stanley's presentation of the data is of a most practical and informative description. He sets out to examine the iron and steel potentialities of the country from both the commercial or market and technical or manufacturing standpoints, besides considering the present position of the industry; and the subject is, therefore, dealt with under these three heads. In regard to the first, he says it is difficult to foretell with anything approaching accuracy what will be the requirements of the Union in iron and steel goods after the war, but there will certainly be a very considerable increase on the pre-war figures. Owing to the difficulty of importing during the war, there has been, and still is, a considerable shortage of supplies, and, besides the necessity for overtaking this shortage in order both to carry out work necessarily postponed and to replenish stocks, the normal requirement will have largely increased through the rapid expansion of agriculture, even if other industries are left out of account. Inspection of the figures giving the values of imported material shows a very large and generally increasing annual total. Even in war time the importation is extremely large, as is shown by the Customs returns. Prof. Stanley thinks the local engineering industry will undoubtedly extend. There is, he points out, a great demand for light castings for agricultural and similar machinery, and also pipes, that would result in largely increasing the consumption of pig-iron if it were obtainable. Scrap metal, moreover, is very scarce indeed, and therefore in all probability several times as much pig-iron as was formerly imported would now be used as such—probably 10,000 tons per annum. Even so, the demand for pig would still be small compared with that for steel, and, obviously, if a modern plant were to be installed the major portion of its output would have to be in the form of steel. Prof. Stanley thinks it quite probable that a local production of iron and steel of, say, 50,000 tons per annum, or, say, 1,000 tons per week, could be absorbed without difficulty. Confirmation of this estimate is afforded in the memorandum of the Government Mining Engineer of 1907-08 on the iron and steel industry. Mr. Kotzé estimated a possible consumption in the Transvaal at that date of 50,000 tons, including sheet steel and pipe. Elimination of such items as these would be compensated by increased requirements of the simpler forms of manufacture. He also estimated the cost of plant at £250,000 to £300,000, and as machinery for these relatively difficult manufactures is not now contemplated, the cost at present would probably not greatly exceed this, allowing for increase of price. Again, Mr. Harbord, reporting to the Transvaal Government in 1910, stated that the importation of finished iron and steel for the years 1906-7-8 averaged 100,000 to 170,000 tons, and estimated the possible local production at 50,000 tons of all classes of metal plates, galvanised sheets, hoop iron, fencing wire, etc. In this connection the same remarks with regard to elimination of some items and increase of the rest, apply, noting further that increase of overseas prices obviously enlarges the possible production in South Africa. Mr. Harbord concluded that an iron and steel plant to manufacture rails, sleepers, bars, wire, galvanised sheets, etc., could not be commercially successful, at least under

the conditions then obtaining. Prof. Stanley differs from the finding of Mr. Harbord, and he gives his reasons in the following passage: "Now, however, conditions are very different; apart altogether from the effects of the war, a much larger tonnage of simple manufactures is required, sufficient limestone is known to be available, coke can be obtained, and even assuming that, judged by overseas standards, smelting would be expensive, it could scarcely be so expensive as to nullify the advantage, approximating £5 per ton, which freight from overseas, even at pre-war rates, confers upon the local producer. When, in addition, rise of prices due to the war is also taken into account, and which is likely to persist for years, the position obviously becomes much more favourable." Prof. Stanley's summary and conclusion may be taken as the last word on the whole subject. They are as follows:—"Iron ore, fuel, and flux of satisfactory quality exist in the Union of South Africa, as do other raw materials required for the manufacture of iron and steel. A market to the extent of 50,000 tons of iron and steel per annum is available in the interior, and the ore, fuel, and flux deposits are so situated that, while they do not occur together, they could be transported by rail without the cost being excessive. An industry which reaches this magnitude will be bound to progress as the uses and employment of iron and steel must continue to increase. Further information is, however, required in some directions—(1) Localities where coking coal occurs, tonnage available, quality of coal and coke, and by-products obtainable therefrom; (2) Occurrences of manganese ores, analysis of ores, and amounts available; (3) Magnitude of certain known deposits of iron ore and in what manner the analysis varies from place to place; (4) Possibility of commercial production of iron and steel from the immense deposits of titaniferous ore. These are stated in order of importance, and the investigations under the first two heads should be instituted as soon as possible; the others are also of great importance and should be undertaken without undue delay."

The Government has given notice, in terms of Section 64 of the Mining of Precious Stones Ordinance, 1904, of the Orange River Colony, that it is prepared to receive tenders for the lease of the exclusive right to mine for precious stones the whole of the Ebenezer Diamond Mine, in extent 790 claims, situated in the Fauresmith district of the Orange Free State. Every tender shall be in writing and must be in the hands of the Assistant Head of the Mines Department, Bloemfontein, Orange Free State, not later than noon on the 17th day of February, 1918, and must be marked on the outside "Tender, Ebenezer Diamond Mine." The consideration to be quoted by the applicant as payable to the Government shall take the form of a monthly licence fee for each claim. Each applicant must deposit, along with his application, the sum of £250. This deposit will be returned to every unsuccessful applicant, but in the case of the successful applicant will be retained by Government and be liable to forfeiture should such applicant fail, within two months after registration of the contract, to satisfy the Government by bank guarantee or otherwise that he is in possession of sufficient capital for working the mine. Upon the Government being so satisfied the amount of the deposit will be refunded. The amount of capital that shall be regarded as sufficient for the proper working of the mine shall be £30,000. A written contract shall be entered into with the Government within two months of the date of notification of acceptance of tender, and shall be subject to the undermentioned conditions, and shall contain such other terms and conditions as may be agreed upon between the Government and the successful tenderer. The contract shall be in the form of a notarial agreement, and all costs in connection therewith, together with the transfer duty provided by Section 3 of Ordinance No. 12 of 1906 of the Orange River Colony, shall be payable by the contractor. Any further particulars may be obtained at the Office of the Assistant Head of the Mines Department, Bloemfontein. The Government does not bind itself to accept the highest or any offer.

RAND GOLD MINING DIVIDENDS FOR 1917.

The following table shows the dividends declared by Rand gold mining companies to date for the year 1917, and the second half-year, together with the total rate of dividends for the three preceding years. The complete list will appear in our next issue.

Company.	1917.		On Issued Capital.	Total Rate % 1917.	Total Rate % 1916.	Total Rate % 1915.	Total Rate % 1914.
	June Rate.	December Rate.					
Brakpan Mines	22½	25	£ 750,000	47½	45	40	30
City and Suburban	6¼	3¾	1,360,000	10	12½	13¾	15
City Deep	22½	22½	1,250,000	45	45	33¾	23¾
Consolidated Langlaagte	10	7½	950,000	17½	22½	25	20
Consolidated Main Reef	5	Postponed	924,364	5	11¼	12½	11¼
Crown Mines	20	20	940,106	40	50	65	85
Durban Roodepoort	5	10	125,000	15	20	25	25
Durban Roodepoort Deep	2½	2½	440,000	5	2½	7½	7½
Ferreira Deep	17½	11¼	980,000	28¾	38¾	42½	75
Geldenhuis Deep	12½	7½	585,753	20	25	20	18¾
Geduld Proprietary	5	5	970,000	10	10	10	5
Ginsberg	5	5	210,000	10	15	15	17½
Government G.M. Areas	—	12½	1,400,000	12½	—	—	—
Langlaagte Estate	5	5	886,500	10	5	15	10
Jupiter	3¾	3¾	1,014,200	7½	7½	—	—
Knights Deep	5	*	743,526	5	17½	15	10
Meyer and Charlton	50	50†	200,000	110	100	80	70
Modder B	40	45	700,000	85	77½	67½	55
Modder Deep	40	45	500,000	85	67½	35	—
New Goch	5	2½	550,000	7½	10	10	—
New Heriot	30	25	115,000	55	70	75	65
New Kleinfontein	—	5	1,151,540	5	5	10	10
New Modderfontein	16¼	18¾	1,400,000	35	32½	32½	30
New Primrose	—	5	325,000	5	10	17½	40
New Unified	7½	7½	250,000	15	20	20	20
Nourse Mines	6¼	6¼	827,821	12½	11¼	10	17½
Robinson	3½	4	2,750,000	7½	8	14	28
Robinson Deep	4/-	*	on "A" shares	—	—	—	—
Simmer and Jack	3¾	2½	3,000,000	6¼	7½	10	10
Rose Deep	12½	17½	700,000	30	26¼	32½	25
Van Ryn	17½	12½	500,000	30	35	40	45
Van Ryn Deep	20	22½	1,196,892	42½	40	32½	25
Village Deep	7½	8¾	1,060,671	16¼	18¾	21¼	21¼
Village Main Reef	10	10	472,000	20	25	20	70
Witwatersrand	20	15	469,625	35	50	50	50
Wit. Deep	5	—	550,000	5	22½	28¾	32½
Wolhuter	6¼	5	860,000	11¼	15	12½	12½
Sub Nigel	7½	7½	431,580	15	10	2½	5

* Not announced.

† 10 % Bonus.

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THE POSITION OF BREYTEN COLLIERIES, LTD.

Points from Annual Report.

The report of the directors of the Breyten Collieries for the year ended 31st October, 1917, states that the overdraft at bankers is secured by mortgage bond on the leases and other assets of the company for advances up to £35,000. During the year a loss was made of £61 1s. 2d., which, deducted from the credit balance of £847 3s. 4d. at 31st October, 1916, leaves a balance at credit of appropriation account at 31st October, 1917, of £783 2s. 2d. Mr. O. P. Powell, the superintending engineer, writes:—I beg to hand you the report of your manager on the operations of the Breyten Collieries, Ltd., for the year ended 31st October, 1917. The raising of the walls of two of the dams on the property has maintained a supply of water in excess of present requirements. Work has been started on the alterations to the sidings at Breyten Station, which will give increased facility for the handling of traffic to and from the mine. The prospecting shaft in the Nos. 3 and 5 areas exposed the extension of the seam at a depth of 75 feet. The coal is of good quality, its evaporative power being quite equal to the average of the mine. The rising cost of mine supplies is being felt on your mine, and every effort is being made in the direction of economy. Unavoidable difficulties which have occurred during the year under review have demanded very special efforts on the part of the manager and his staff.

MANAGER'S REPORT.

The manager writes:—Coal is being won from two adits on the property. The seams maintain their thickness and

the coal is of good quality. The total tonnage won for the period was 446,828 tons. Dress and pickings amounted to 3,971 tons, 8,875 tons of mixed and fire coal were dumped, 10,955 tons of fine coal were stowed underground, and 393,027 tons were marketable coal. Coal cutting machines and hammer drills: There are 55 Siskol coal cutting machines and 20 hammer drills at work on the property. Footage driven and sunk during the period: No. 2 adit, 10,788'81 feet; No. 3 adit, 674'11 feet; No. 5 adit, 8,407'31 feet; total, 19,870'53 feet. Sinking: Air and prospecting shafts, 123 feet. Machinery and plant: During the period the installation of the following machinery and plant has been completed: Boilers and engine as a standby for Nos. 3 and 5 haulages; pump for borehole pumping plant. The main boilers and steam pipes have been covered with non-conducting material. Railway siding: This is being maintained in good order. Weighbridge: This is tested at intervals, and is working quite satisfactorily. Water supply: The central and lower dam embankments have been raised 5 feet, the central dam giving us sufficient water during the season for all our needs without resorting to pumping from the lower dam. All dams are full of water. Coal in all the faces is of the same excellent quality and all development drives are well ahead of requirements. I wish to express my appreciation of the excellent conduct of the staff and of the highly co-operative manner in which the various members have assisted me.

ANSWERS TO CORRESPONDENTS.

All enquiries addressed to the Editor must bear the writer's name and full address. We cannot reply to enquiries by letter, but telegrams with replies prepaid will be answered. Correspondents are requested to write their names and pseudonyms distinctly.

- "Anxious" (P.M.Burg).—(1) The figure given in our report was correct. (2) A pure speculation, not an investment.
- "W. W."—(1) Yes. (2) Certainly. (3) The extracts from the annual report printed in this issue answer your questions.
- "Shareholder."—(1) 32s. is the highest figure they touched. (2) New Law Courts, Johannesburg.
- "Engineer."—It may be obtained through any branch of the Central News Agency.
- "A. M." (Selukwe).—We should leave them alone.

The New Board of Reference.

At a delegates' meeting of the S.A. Mine Workers' Union held this week, it was decided by a large majority to accept the offer of the Transvaal Chamber of Mines for the submission of disputes to a Board of Reference.

New Patents.

553. Richard Fitz Power.—A model artillery range for instructional purposes.
554. Percy St. George Kirke.—Improvements in or in connection with the generation of steam and the heating of liquids generally.
555. John Coutts Shaw.—Improvements in the process of chilling and freezing animal substances and in apparatus therefor.
556. Max (Mordikha) Simon.—Improved method and means for making springs for mattresses, settees, chairs and the like.
557. Arthur Edward Hooke.—Power-driving mechanism for canal and other barges and water-craft of like nature.
558. Edgar Arthur Ashcroft.—Improvements in the manufacture of anhydrous magnesium chloride.
571. Emmanuel Lemaire.—A new or improved safety cartridge for mines.
572. Frederick George Whitelock.—Improvements in the treatment of rock phosphates to render same more soluble.
573. Sydney Pratt Blackmore.—Improvements in grass rods or attachments for ploughs for burying grass or other standing growths in the operation of ploughing.
574. Felix Johan Tromp.—An improved process for rendering raw mineral phosphates more available as a phosphatic fertilizer.
575. Richard Joseph Haddick.—Improvements relating to cooking stoves.

Mr. F. S. Lynch has been appointed chairman of the Kroonstad Coal Estate Company, in succession to the late Mr. C. E. Nind.

EDWARD DODD, 19, LOVEDAY STREET (Opposite Goldfields Hotel).

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CAPE DIGGINGS: NOVEMBER DIAMOND OUTPUT.

The following is a statement furnished by the Chief of the Detective Department of the output of diamonds from the public diggings in the Cape Province during the month of November, 1917:—

ALI WAL NORTH.

Area.	Diggers.	Carats.	Value.
Sand Drift	5	21	£74 7 6

BARKLY WEST.

Bad Hope	2	5	25 0 0
Delpot's Hope	29	102	555 10 0
Elandsdrift	4	30½	190 10 0
Forlorn Hope	6	12½	31 0 0
Gong Gong	47	320½	2,235 0 0
Good Hope	52	177¾	1,408 17 6
Harrisdale	8	147	703 0 0
Hebron (Windsorton)	121	755	4,932 11 0
Holpan	13	87¾	433 7 6
Jonas Kop	3	4¾	12 15 0
Keiskama	9	44	216 5 0
Klipdam	65	398½	2,180 10 0
Klipdrift (Barkly West)	40	153½	753 12 6
Longlands	45	374	2,321 15 0
Niekerk's Rush	14	122	386 0 0
Ricketts' Prospect	5	13¾	75 0 0
Rosalind	13	39	217 10 0
Scholtz's Prospect	36	202½	1,026 0 0
Snyder's Rush	23	179¼	1,071 0 0
Union Kopje	1	½	0 15 0
Van Zoelen's Laagte	4	29¾	133 5 0

Area.	Diggers.	Carats.	Value.
Waldeck's Plant	50	519	3,373 2 6
Williamstown	3	28½	334 0 0
Winter's Rush	47	403½	2,686 17 6

640 4,150½ £25,303 3 6

Note.—The number of claimholders in the mining district of Barkly West during the month of November, 1917, was 1,111.

HERBERT.

Brypaal	9	66¼	311 5 0
Platdrift	9	23	89 15 0
Schmidt's Drift	1	9¾	58 0 0
	19	99	459 0 0

KIMBERLEY.

Robinson's Kop	8	47	410 5 0
Wedberg	14	112½	843 5 0
	22	159½	1,253 10 0

TAUNGS.

Killarney	5	49	325 10 0
------------------	---	----	----------

PRIVATE ESTATES.

River View Diamond Syndicate ...	128	£1,219 7 6
New Vaal River Diamond Synd. ...	1,377¾	8,620 0 0
Pniel Estate	271½	1,433 0 0

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THE GOVERNMENT MINERS' TRAINING SCHOOLS.—IV.

[BY A SPECIAL REPRESENTATIVE OF "ONS LAND."]

After the explanation in the preceding articles of the purpose and scope in general of the Government Miners' Training Schools in the Transvaal and of what the writer heard in connection therewith, he wishes to give some particulars also in connection with what he saw. Both schools—the one at Wolluter (near Johannesburg) and the other at Bantjes (between Roodepoort and Florida)—were visited by him, the first named after work in the mine was finished and the last named during the working hours in the mine. In company with Mr. Fergusson, whose position the reader will be acquainted with, who has followed the preceding articles, the writer visited the above-named school and was received by Mr. Bolytho, the principal of this school. The buildings (the bedrooms, the dining and at the same time reading and common room) were inspected. Although the location of these, in the immediate proximity of a huge hill of white sand which, deprived of its precious contents, lies heaped up here, cannot be described as favourable, nothing but great praise can be expressed for the outward appearance and the inside of these buildings. The scholars are domiciled in a long row of rooms, well kept, plastered white, each 16 ft. by 12 ft., and with two in each room. The ventilation is excellent, the furniture simple yet sufficient. Two beds, one table in each room, while some are provided with a small chest of drawers, probably the private luxury of the residing scholars. Everything looked clean. Here it may also be noted that the scholars are provided with suitable clothing for the work underground. The scholars, 37 in number, live here, as the writer was told and as he also could well see, as a happy family. Some sat reading, others were writing, and others were playing the concertina or guitar or other instrument, still others were developing their bodies by means of gymnastic exercises; shortly, everyone tried to spend his free time as pleasantly and as profitably as possible. There reigned among the scholars a sociable mutual intercourse; one saw that they felt at home here and were happy. All were strong, well-built and healthy white young men. The intercourse between the principal, Mr. Bolytho, and the scholars appeared to be of a hearty and wholly natural kind. It was clear that the scholars put their trust in him and respected him without fearing him. On asking Mr. Bolytho if the scholars never let it appear if they had one or other grievance, the answer came: "Yes, sometimes, when they have progressed somewhat they become dissatisfied and think that they already know the work altogether and want to earn more." In connection with this answer it will certainly not be out of place to tell what Mr. Kotzé, the Government Mining Engineer, related in connection therewith in an interview which the writer had with him. The period of training in the Miners' Training School, according to Mr. Kotzé, lasts only two years. Compare this time with that required for an ordinary tradesman and then consider that the scholars in the Miners' Training School immediately receive a wage of 4s. 3d. per day, although they begin with no knowledge of the work. It was necessary to open schools of this kind and to make the conditions attractive in order that white persons can be trained in this mine work. In Europe this is unnecessary. There the mine worker learns the work from his father or other member of the family or acquaintance. The mine worker there learns his trade whilst working. In South Africa this cannot be done without a Miners' Training School, since all the work in the mine is done by natives. In connection with this case attention can also be drawn to the expenditure connected with the Miners' Training School about which the writer received information by making investigation of the revenue and expenditure over the month of last August. From this it appears that the expenditure during that month for the Wolluter Miners' Training School was £619 2s. 2d., the revenue during the same month being £221, so that there was a deficit of £398 2s. 2d. The

expenditure for the Bantjes Miners' Training School during the same month was £516 15s. 1d., the revenue was £331 18s. 2d., so that the deficit for August was £211 17s. 2d., or of both schools £609 19s. 4d. Of this, as before noted, three-fourths are borne by the Government. The question of wages will be further dealt with in this article. According to the books, the number of scholars in both institutions on the 31st July was 95. During August seven new students were taken on, and six scholars, on account of the expiration of their term of study, were discharged, so that the total at the end of that month was 97. Of this number 19 were on active service, two were awaiting medical examination, and seven were on the yearly holiday; not one was on sick leave, and 69 attended the classes. Among the new students received during August three were from the Witwatersrand; Hartwig and Lourenz from Keiskama Hoek; Jooste from Parys, O.F.S.; and Bekker from Pretoria district. Mr. Bolytho thinks that the age for admission should be not less than 16 and not more than 23 years.

THE INSTRUCTION.

With reference to the instruction at the Miners' Training Schools, Mr. Bolytho stated as follows:—We teach the young men in the main little else than to use their hands. What concerns the education of the young men during their stay in these schools is supervised by a Board, consisting of several members, amongst whom is Mr. Coleman, Technical Adviser of Education. The first thing that the student at the Miners' Training School is taught is how he has to attend to the safety regulations and what is and is not dangerous underground. When the student is at home in this, then he is put to work. He learns just how to drill a hole by hand and how the blasting in this hole is done, so that he will be able to supervise the native who is charged with the performance of this work. Later on the scholar learns machine drilling, when he is put as an assistant to an older scholar. During the month of August lectures were given in this institution on the breaking of ground by hand, reclaiming, general mine work, timbering, mining regulations, hand drilling, and machine drilling. A further four lectures were given on the rendering of first aid at accidents and also four practical lessons, while during the same month 16 hours' instruction was given in physical culture. When the Miners' Training School was just started the scholars had some objections to what they called "Kafir work." They disliked having to personally do drilling and hammer work; now, however, they see that it is necessary for them to learn this work. Each young man who is admitted to the school has to start with the learning of this work. They must learn how to work with drills and how to use the drills in their proper order, while they must also learn to distinguish the blunt from the sharp drills. Then they are put for a term of about 14 days on the lashing of the rock, although this is really Kafir work. The scholar recognises, however, that he has this also to learn, just as there is a correct method in the handling of the shovel, and secondly, to learn what a native, employed on this work, can do in a certain time.

To be continued.)

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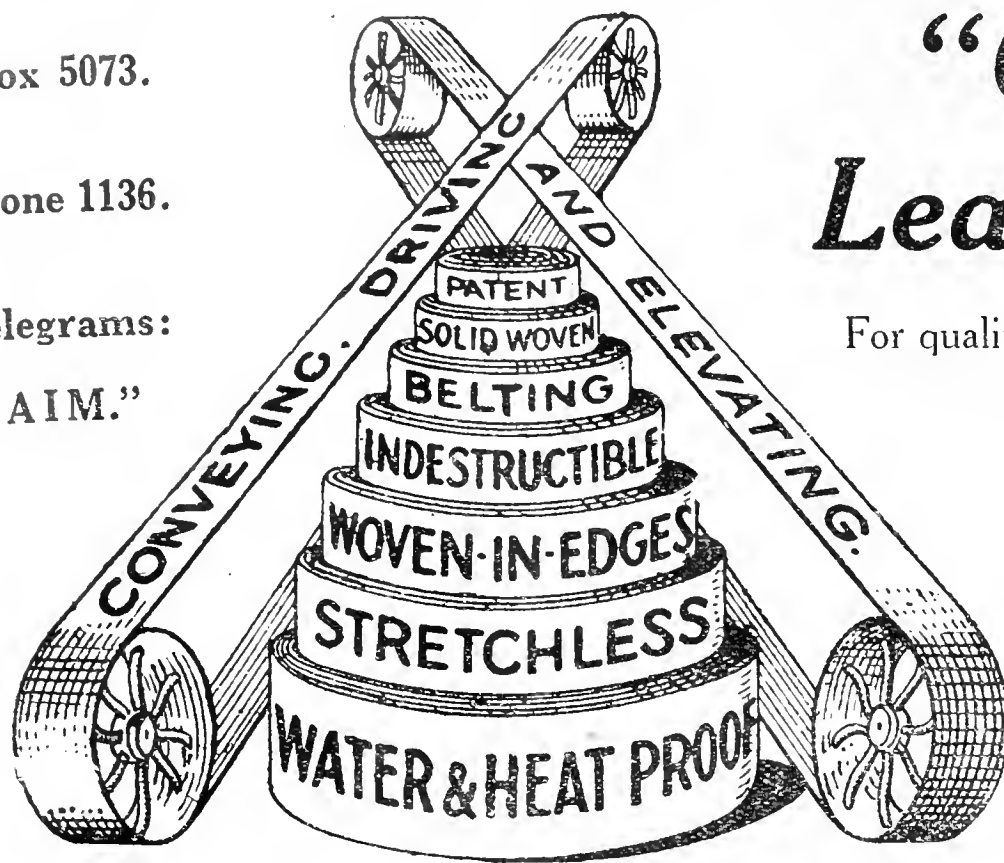
*Translated from a series of articles in *Ons Land*.

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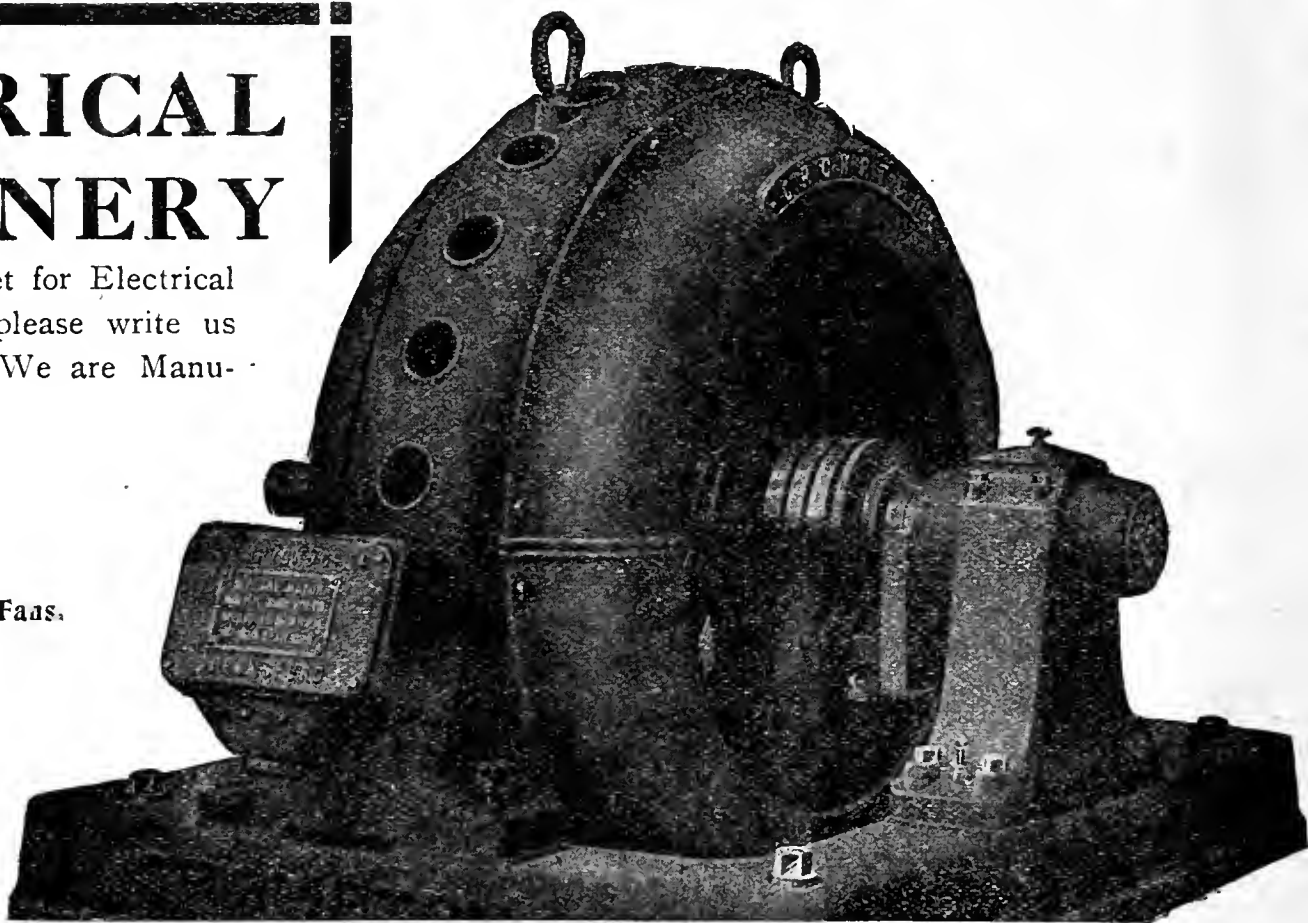
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PROGRESS OF THE SOUTH AFRICAN COAL INDUSTRY.—II.

Points from the Annual Report of the General Manager of the S.A.R.

Low rates for shipment coal are in force from the Natal, Transvaal, and Free State Collieries to Port Natal and Delagoa Bay, the rate from the distant collieries being 265d. per 2,000lbs. per mile. In 1897—the year before shipment rates were introduced—the total output of the Natal Collieries was 273,235 tons, whereas in 1916 1,708,405 tons of coal were shipped from or bunkered at Durban. In 1910 the coal bunkered at and exported through Lourenco Marques was 145,363 tons; in 1916 it was 738,358 tons. In view of the importance of this traffic considerable attention has been devoted to the development of the coal industry. The coal tariff divides itself naturally into three classes, viz.: Rates for local consumption; rates for bunkering; rates for export. Prior to 1910 there was little long-distance coal traffic. Areas within two or three hundred miles of the mines were served, but beyond no great volume of traffic was carried except by sea. With the advent of Union, two possibilities presented themselves. A small bunkering industry had been established at Capetown which gave promise of considerable expansion if properly fostered, as it was found that ships which had hitherto bunkered at Cape Verde and the Canary Islands could be induced to bunker at Capetown if the price were suitable. The other possibility was the wider use of coal in the Cape Province where wood had hitherto been the principal fuel. With the object of inducing consumers in the Cape to utilise coal for domestic and industrial purposes, arrangements were made, when assimilating the coal tariffs, to provide cheap rates for long distances and also to reduce the rates for short-distance traffic. The maximum rate fixed was 17s. 6d. per 2,000lbs., and the schedule as drafted has been found very effective in extending the use of coal throughout the Union. It was found, however, that the conditions governing the Capetown coal trade necessitated further reductions in the rate, and in October, 1913, the rate from Witbank to Capetown, 1,046 miles, was fixed at 14s. per 2,000 lbs. on coal for local consumption. The tonnage of coal for local consumption conveyed over 650 miles has increased considerably since the introduction of the reduced rates, as illustrated by the following figures:—Six months ended 30th June, 1913, 46,672 tons; six months ended 30th June, 1914, 121,889 tons; six months ended 30th June, 1915, 199,549 tons. The increase in 1916 has been considerable, though the actual figures are not available. The Administration encountered strong opposition in the establishment of a low overland rate to admit of coal being bunkered at Capetown at prices sufficiently low to compete with those in operation at the Islands. The rate originally quoted was approximately 15s. per ton of 2,000 lbs., not a high rate for a haul of over 1,000 miles, but too high, under normal conditions, to attract business on an extensive scale. Practically no traffic resulted, and after further investigation the rate was reduced in 1913 to 14s. per 2,000 lbs., less a rebate of 1s. per ton*—a rate equal to 149d. per ton per mile. This immediately created additional traffic, and placed the bunkering trade of Capetown on a sound footing. Particulars of the tonnage bunkered at Capetown since 1909 are as follows:—

	Natal. Tons.	Transvaal. Tons.	Welsh. Tons.	Total. Tons.
1909	—	—	—	58,763
1910	—	—	—	83,510
1911	184,218	694	15,239	200,151
1912	327,133	14,648	13,735	355,516†
1913	253,399	25,162	4,060	283,621
1914	160,139	113,189	26,346	299,674
1915	205,193	139,740	20,784	365,717
1916	224,281	371,174	10,203	605,658
Total				2,251,610

* The rebate was withdrawn in 1916 and a war surcharge of 6s. per ton applied in respect of bunker coal.

† Tonnage abnormal owing to coal strike in Great Britain and to large number of immigrant vessels proceeding to Australia via the Cape route.

The effect of the low overland rates will, however, be better appreciated from the following figures:—

	Tonnage conveyed from Transvaal and Natal Coalfields to Capetown by Rail	Tonnage conveyed Durban to Capetown by Sea.
1912	22,183	398,458
1916	676,362	14,872
Inc. or dec. +	654,179	-383,586

For the information of those who claim that the low overland coal rate is unpayable, I may mention that the revenue earned by a 30-ton truck carrying classes of traffic over a distance of 1,047 miles is as follows:—

	£	s.	d.
Export fruit	9	0	0
Export forage	11	1	3
Export maize	15	0	0
Forage for local consumption	16	11	11
Sheep	18	6	0
Shipment coal	19	10	0

No one has ever suggested that the rates on the other classes of traffic are unpayable, and yet coal is a commodity easy to handle, is easily loaded and discharged, is consigned from definite centres in large and regular quantities, requires no protection or special care en route, and is not a source of frequent claims for compensation. In August, 1912, the Administration decided to reduce the rate for export coal by 1s. per 2,000 lbs., the reduction being granted in the form of a rebate on proof of exportation. There was an immediate increase in the tonnage of export coal. In 1911, the year before the reduction, the tonnage exported beyond South Africa from Port Natal and Lourenco Marques was 106,266 tons. This figure had increased to 792,861 tons in 1913. The export trade has been restricted since the outbreak of war owing to the dislocation of shipping, but even during the last three years the respective tonnages were more than five times greater than in 1911. In a low-priced commodity like coal many difficulties present themselves in fixing export rates. Coal intended for one overseas market cannot always bear the same rail rate as coal exported to another, the prices being largely dependent upon local considerations, competition from other sources of supply, and the general trend of shipping. If the position is to be met on a business footing the continuance of a uniform export rate may be impracticable, and it may be found necessary to quote varying rates according to market conditions prevailing at the different places to which the cargoes are consigned. But this is a matter for consideration after the war.

(To be continued.)

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Treacle Sugar.

THE WEEK IN THE SHAREMARKET.

A Holiday Market—Far East Stocks Firm—Fluctuations in Laces.

On Saturday morning there was a further move in Lace Props, which brought them to 16s. 6d., at which they closed sellers on the call. Business was limited, in view of the approaching holidays. Springs Mines again tried to pass the 64s. limit in vain. Modder Easts were a turn harder, but the three-year options fell to 7s. 1d. The difference between the options seems somewhat invidious, in view of the fact that the position of the company will be fully established long before the shorter date expires. The annual period of gastronomic disturbance, popularly known as the "festive season," kept the Stock Exchange closed till Thursday morning. Somewhat unexpectedly the market was quite firm, with the exception of Lace Props, which gave away 2s. of their recent gains with sales at 14s. 6d., after a commence transaction at 15s. Springs, which were over hastily sold at 63s. 3d., finished at 61s.; Modder Bs. were better, also four-year Modder East Options. In outside stocks there has only been one sale of an odd number of S.A. Alkalis at 70s. Buyers of Monteicos at 32s. 6d.; Union Tins at 3s. 6d.; and a quotation for South Van Ryns of 10s. 9d.—11s.

* * * *

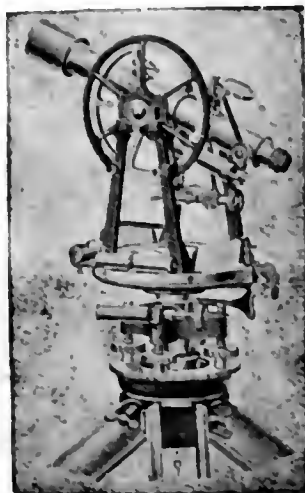
The market was firm all Thursday, Springs closing somewhat better. The following changes in prices were noted at Friday's call:—Buyers and sellers: Africans 8s. 2d.; Apex, 7s. 3d., 7s. 6d.; City Deeps, 63s. 9d., 64s. 6d.; Mines Selections, 25s. 6d.; Daggas, 26s. 6d., 27s.; Leeuwpoots, 16s. 3d., 17s.; Modder East three-year Options, 7s. 3d., 7s. 5d.; four-year Options, 8s. 4d., 8s. 5d.; New Modders, £22 15s., £23; Rand Selections, 87s. 6d.; Sub Nigels, 24s., 24s. 3d.; Welgedachts, 22s. 6d. Sales: Frank Smiths, 3s. 3d.; Geduld Props, 38s.; Government Areas, 73s.; Knight Centrals, 3s. 3d.; Lace Props, 15s.; Van Ryn Deeps, 72s. 3d.; Springs, 64s. 3d. Business was restricted, only ten stocks being dealt in.

	Tues., 18th.	Wed., 19th.	Thurs., 20th.	Fri., 21st.	Sat., 22nd.	Thurs., 27th.
Anglo-American Corp.	—	—	—	25 0*	23 0*	—
African Farms	8 0*	8 2*	8 1*	8 0*	8 0*	8 0*
Apex Mines	6 11*	7 2*	7 4*	7 6*	7 7	7 0*
Aurora Wests	—	13 0*	—	—	—	—
Bantjes Cons.	3 0†	2 6*	2 8	2 9	2 10†	2 6*
Brakpan Mines	113 0A	110 0*	110 0*	110 0†	111 0†	110 0†
Breyten Collieries	—	12 0*	12 0*	12 6	12 3*	12 0*
Brick and Potteries	5 0*	—	5 0*	5 0*	—	5 0*
British South Africa	—	—	—	—	14 6†	—
Bushveld Tins	—	—	—	—	0 6*	—
City and Suburbans	—	18 0*	18 9	18 3	19 0†	18 0*
City Deeps	62 0B	62 0*	62 6	64 0	64 0*	64 6
Cloverfield Mines	—	8 6*	8 8*	8 7	8 6*	8 6*
Clydesdale Collieries	12 0*	12 0*	12 0*	12 0*	—	12 0*
Concrete Constructions	4 0†	—	4 0†	—	—	4 0†
Cons. Investment	19 6†	19 0*	19 6*	20 0*	20 0*	20 0*
Cons. Langlaagtes	16 0*	15 6	16 6*	17 9	—	—
Cons. Main Reefs	13 9*	14 0†	13 9*	14 0*	14 0*	14 0
Cons. Mines Selection	—	24 6*	24 9	24 9*	—	25 0*
Coronation Collieries	—	32 0*	32 0*	32 0*	31 0*	—
Coronation Freeholds	—	—	—	0 4*	—	0 5*
Daggafontein Mines	25 3*	26 0	26 0*	26 0*	26 6	26 3*
Dagga Options (3 yrs.)	10 3	10 3*	10 3*	10 3	10 3*	10 3*
Durban Road. Deeps	11 0†	—	—	—	—	—
East Rand Coals	2 0*	2 0	2 0	1 11*	1 11*	1 11*
East Rand Deeps	0 11*	0 11*	0 11*	0 11*	—	0 11*
East Rand Minings	15 0†	—	14 6†	14 0†	14 6	14 0
East Rand Props.	5 6†	5 0†	4 6*	4 0*	4 0*	4 0*
East Rand Debentures	—	£61*	£61*	£61*	£61*	£61*
Eastern Gold Mines	1 1*	1 1*	1 1*	1 1*	1 1*	1 1*
Frank Smith Diamonds	—	3 0	3 0*	3 0*	3 0*	3 0*
Geduld Props.	37 0†	36 6	37 0	37 6*	37 6	37 9

*Buyers. †Sellers. AOdd lots. BEx London.

	Tues., 18th.	Wed., 19th.	Thurs., 20th.	Fri., 21st.	Sat., 22nd.	Thurs., 27th.
Geldenhuis Deeps	—	20 0†	20 0*	—	—	20 0*
Glencarns	—	1 7*	1 7*	—	—	—
Glencoe Collieries	—	8 3*	6 3	—	—	—
Glynn's Lydenburgs	2 0†	2 0†	17 3	—	17 3*	16 0
Government Areas	71 0	71 0	71	71 3	71 0	71 0
Jupiters	—	4 6	4 6*	4 6	5 0*	—
Klerksdorp Props.	—	—	1 3*	1 3*	—	1 3*
Knight Centrals	2 11	2 11	3	2 11	3	3 0*
Knights Deeps	—	6 0*	6	—	5 0*	—
Lace Props.	10 6	11 6	11 6	15 0	16 0	14 6
Leeuwpoot Tins	15 3*	15 9	15 0	16 0	15 0	15 9
Lydenburg Farms	7 0*	7 0*	7 2	7 4*	—	7 11
Main Reef Wests	2 6*	2 8	2 5	—	2 8	2 9
Middelylei Estates	1 0*	1 0*	1 3†	—	—	1 3†
Modder B.	17 0†	167 0*	167 0*	167 0*	170 0	172 6
Modder Deep Levels	143 9*	148 6*	147 6*	147 6*	149 0	—
Modder Easts	20 9*	21 0	20 9	21 0	21 12	21 3
Do. Options (3 years)	7 2*	7 3	7 3	7 0	7 1	7 1*
Do. Options (4 years)	8 3*	8 5	8 3*	8 3	8 3*	8 6
Natal Navigation Coll.	19 0*	19 0*	—	19 0*	19 0*	19 0*
National Banks	260 0†	260 0†	260 0	260 0	260 0†	260 0†
New Boksburgs	1 2*	1 2*	1 2*	1 2*	1 2*	1 2*
New Eland Diamonds	20 6*	20 6*	22 6*	23 0	23 6*	23 6*
New Era Cons.	10 0	—	9 9*	—	10 3*	10 0*
New Geduld Deeps	6 0*	6 0*	6 3*	6 0*	6 2	—
New Gochs	—	—	6 1†	—	—	—
New Heriots	29 0†	—	—	—	25 0*	25 0*
New Kleinfonteins	18 0	17 6*	17 3*	18 0†	17 3	17 0*
New Modders	460 0†	450 0*	452 6A	—	452 6	—
New Rietfonteins	1 4	1 4*	1 4*	1 5	1 4*	1 4*
New Unifieds	7 6†	—	—	—	—	—
Nigels	2 3*	2 3*	2 3*	2 4*	2 4*	2 3*
Nourse Mines	19 9†	19 9†	—	19 6*	19 9*	20 0
Pretoria Cements	95 6	95 0	95 0	95 0*	—	97 6A
Princess Estates	2 6*	2 0*	2 6†	2 6†	2 6†	2 6†
Rand Collieries	4 0†	4 0†	4 0†	—	1 0†	—
Rand Klips	9 2*	9 4	9 4*	9 1	9 0†	9 0*
Rand Nucleus	—	—	—	1 3*	1 3*	1 3*
Rand Selections	86 0	86 0*	87 6	86 6*	85 6*	86 0*
Randfontein Deeps	4 0*	4 3†	4 3†	4 2†	4 3†	—
Randfontein Estates	12 0*	12 0*	12 3	12 3*	12 3*	12 0*
Rooibergs	9 7*	9 8*	9 8*	9 9	9 8*	9 8*
Rose Deeps	—	—	—	—	—	19 0*
Ryan Nigels	3 6†	3 6†	—	3 6†	—	3 6†
Shebas	1 0*	—	—	1 0*	1 2*	1 2*
Simmer Deeps	—	—	—	3 0†	—	—
S.A. Breweries	28 0†	—	28 0†	23 0†	28 0†	23 0†
S.A. Lands	5 0	5 1*	5 3	5 6	6 0	5 10*
Springs Mines	65 0	65 9	63 9	63 9	64 0	64 0
Sub Nigels	23 9†	23 9	23 6A	23 9	24 0*	24 3*
Swaziland Tins	27 0†	—	22 6*	—	27 0†	27 0†
Transvaal Lands	15 0†	12 6*	14 0†	—	—	14 0†
Transvaal G.M. Estates	14 0	14 0*	13 6	13 6*	13 6*	13 9*
Van Ryn Deeps	70 0	70 9	70 3	71 3	71 6	71 6
Village Deeps	20 6†	20 6†	—	20 0*	20 0*	20 3*
Village Main Reefs	—	15 0†	—	—	11 0*	15 0†
Welgedachts	—	22 6*	—	22 6*	—	21 6*
West Rand Cons.	4 3*	—	4 3*	4 6*	4 6*	4 6*
Western Rand Estates	1 6*	—	1 6*	1 6*	1 6*	1 6*
Witbank Collieries	47 0	47 0†	47 0†	—	47 0†	47 0†
Wit. Deeps	6 0*	6 0*	7 0	6 9*	6 9*	6 9*
Wolhuters	5 0*	5 3*	5 0*	5 0*	5 1*	5 2*
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DUST PREVENTION IN MINES.—IV.*

[By ARTHUR C. WHITTOME and J. H. VEASEY]

(6) *The "deadly" dust is invisible, therefore, continuous means of removing it from the air, and of ascertaining the daily condition of the air itself, should be provided at selected points in the main airways.*—There are two aids by which the invisible dust can be continuously removed from air—(a) by mechanical separation at definite points, (b) by the stream of air being intermittently super-saturated with water in the form of fog, the water being deposited at intervals either by contact with already wetted walls or by a shower of larger water atoms. The latter (b) system gives the advantage that the air is slightly cooled at each point where it receives the fog, or rather between that point and where evaporation of fog ceases. It will be understood that if the air, in its course through the mine workings, is raised in temperature—as it must be—then, even though it was saturated at the lower temperature (as it would be, for instance, at the foot of a wet downcast shaft) it would not be quite saturated at the higher one. It will become 100 per cent. saturated, or practically so, at all points where water is falling, and will approximate to 100 per cent. saturation wherever the walls are wet, even if no water falls. But the cooling effect by evaporation from drops of falling water, or from wet walls, is almost negligible on the air, but quite appreciable in the falling water and on the rock, the great proportion of the heat used to evaporate the water being taken from the water or rock and very little from the air. This is demonstrated by cooling towers, dams, etc. On the other hand, if a fog is discharged into the air, and dissipates partially by evaporation and partially by deposition, then the latent heat required to evaporate it is entirely derived from the air. A very considerable cooling effect could be obtained if at stated intervals in the main airways small water blasts or so-called atomisers were installed and continuously operated, fogging the air to an extent which would not incommode the workmen, but to such an extent as would prevent evaporation from the mine walls or running water, and would, in fact, keep the walls wet, after they had been wetted (subsequent to blasting) by filling the mine with fog. The quantity of water and air required for such atomisers would be very small, the apertures in the air cones being not larger than $\frac{1}{16}$ in. and the water-cone apertures, say, 1-64 in. As these water blasts would be continuously in operation they would need no cocks, and they would be erected at all points found desirable, including ore passes, ore bins, stope boxes, stope air outlets, and the like. At some of these points the air and water cones could be increased in size so as to provide for the amounts of dust created, say, at ore passes, ore bins, grizzlies, etc. As will be seen from the description given later, the sizes of the air and water cones can be regulated by the official in charge of the installation, but cannot be interfered with by the workmen. These water blasts discharging in the direction of flow of the ventilating current would continuously assist in accelerating the air velocity.

There is no question that a continuous sampling of the air, at selected main air-outlets from working places, would tend to a great improvement in the working conditions of all mines. The present great difficulty consists in the operations of collecting and testing air samples occupying such a lengthy period; even then the results only show the conditions for a few minutes out of the 24 hours. It is hoped that a system for giving a continuous record over the whole 24 hours will have been thoroughly tested before the reply to the discussion on this paper is due.

(7) *Watering down of faces and walls should be done with atomised water; only heaps of rock should have streams of water directed upon them.*—One only needs to see a street watercart at work to realise the importance of this point. The small jets of water raise clouds of dust. A large jet of high-pressure water, such as is used for watering down faces in mines, must have an even greater effect than the small jets of a watercart. Therefore, clouds of invisible dust must be thrown off the walls by the jet of water; portions of this dust are caught by the stream, but considerable quantities must be held by the air and flow with the ventilating current. The use of streams of atomised water would obviate this, as the stream which dislodged the dust could be made very wide and only small quantities at one side of the stream would escape being caught. In any case, hanging and side walls should be wetted down against and not with the flow of the ventilating current, so that dislodged dust would flow into the stream of water and not away from it.

(8) *The mechanical ventilation of dead-ends should be on a system by which induced currents could be directed to the working faces, whilst foul air would be exhausted from the working places.*—There are two systems for the mechanical ventilation of dead-ends: (a) fresh air is delivered as near as possible to the working face through pipes, the acceleration of the current being attained either by air jets or fans; (b) fumes and foul air are drawn from the working place by similar means, and delivered to the main return airway. There are advantages for each system. By (b) the foul air is delivered to the upcast shaft without passing through other working places, therefore a minimum amount of dust is deposited after blasting. By (a) the current of fresh air is delivered with velocity at the end of the ventilating pipe and sweeps forward to the working face, driving out foul air and keeping that portion of the working place sweeter than is possible with the exhaust system by which the air current is drawn along the drive towards the face; but is short-circuited immediately it reaches the end of the exhaust pipe, only a small portion of the air reaching the

face; at many of such working places there is little fresh air other than that from the rock drills actually delivered to the working face. The authors suggest that the most preferable system would be a combination of the exhaust system with a modified pressure arrangement. A short length of air pipe, with an air jet therein to accelerate the air current, should be installed with its outlet as close to the face as is feasible, the inlet being on the windward side of the exhaust pipe end. This would provide the necessary velocity to deliver air to the face, and if the accelerating jet was of the water-atomising type the air delivered would be quite free from dust.

(9) *There should be a simple and immediate indication as to whether the water blast has been put into operation, the miner responsible. This check should be available as soon as the miner is out of the mine.*—One of the complaints most frequently made in connection with developers is that they do not turn on the water blast. The omission to perform this duty has a doubly bad effect in that the dust is not laid at its point of origin and the working place is not wetted down. The omission of dust laying, of course, involves the possibility of gas remaining in the working place; most of the gassing accidents in dead ends are due to this cause. It is obvious that it is desirable that there should be an absolute check on the surface, showing whether the miner has or has not turned on the water blasts he is responsible for. It should be a portion of each shift boss' duties to test each water blast in his section, ascertaining that it is in good order and pointed in the correct direction. The miner must, under the regulations, test his water blast before lighting up. So that the only cause of trouble which is possible, apart from an actual failure of the air or water supply after testing, would arise owing to the water blast, or its connections or pipes, being damaged or buried or the apparatus being knocked over and the jet of atomised water delivered in the wrong direction. The design of the apparatus and its method of installation should be such that no damage can occur to it and no change of direction of the stream be possible. At the same time the miner should be compelled to turn on the air or water, or else convict himself of the omission.

(10) *The owners of those mines—and the underground employees therein—in which it can be shown that there is no dry dust during working shifts, should be relieved from all contributions to the Phthisis Compensation Fund.*—Such a complete system of dust prevention as has been outlined would cost a considerable amount to instal, but, apart from the humanitarian considerations, the financial returns would more than compensate for the outlay, as there would be considerable savings in air and water, and in pumping plant maintenance, and until such complete arrangements are made no mine—nor the employees therein—could be relieved from the heavy phthisis compensation contributions. There can be no doubt that as soon as any mine can show a complete absence of dry dust during working shifts it—and its employees—will be exempted from phthisis payments, under sub-section 2, clause 15, of Act 19 of 1912. In this manner alone the cost of the installation would be returned annually.

Manicaland Output.

The mineral output of the Territory of the Companhia de Moçambique (Manicaland) for the month of November, 1917, is as follows:—Reef: Mill: Gold won (fine), 3 ozs. 9 dwts.; tons crushed, 16; value, £14 5s. 9d. Alluvial: Gold won (fine), 753 ozs. 16 dwts.; cubic metres dredged, 87,167; value, £3,124 16s. 3d. Copper: Copper declared, 15 tons (approximate); value, £1,500.

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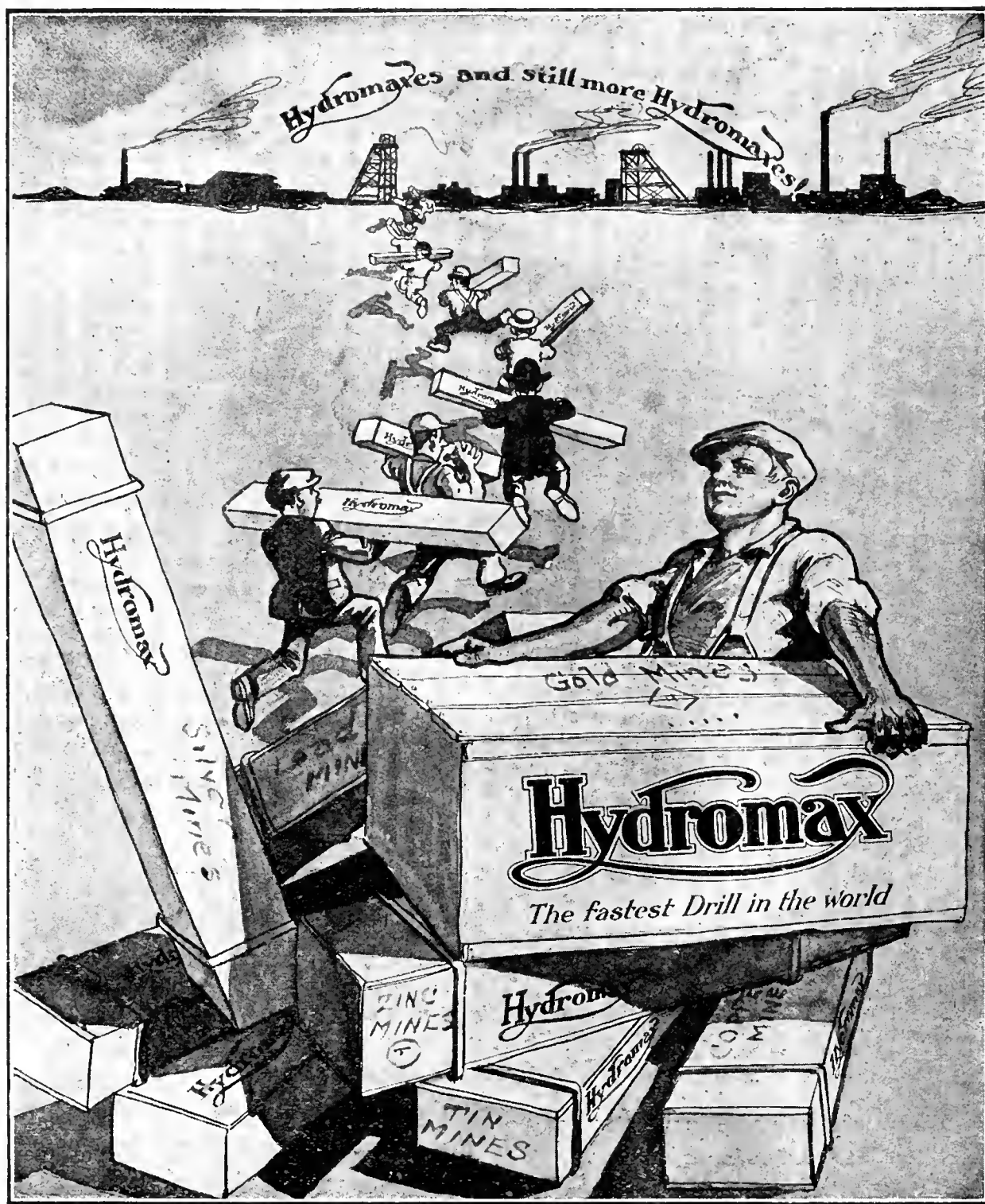
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THE WEEK IN THE MINING MATERIAL AND ENGINEERING TRADES.**Trade in the Year 1917 Reviewed.**

In turning back to the early days of the year 1917, the chairman of the A.B.C. Bank, at its general meeting in January, gave a review of the year 1916 as follows: "That with regard to the general position in South Africa it was remarkable that there had been no set-backs during the war. On the contrary South African trade had come through the war with wonderful success." Very similar remarks can well be extended until the last quarter of this year, when the pooling of the mine stores, made at the request of the British Minister of Munitions, came into force. But until then the mining material business went with such a swing that on the whole it is reported from various quarters that this has been a marvellously good year for business, as it is extraordinary to relate that considerable pre-war stocks were on hand, and great quantities have been sold during 1917. For example, only last week an old standing firm cleared out a large parcel of iron that had been in stock for some twenty years. Certainly for most parts of the world the great war has been a catastrophe, but for the Johannesburg merchants who had accumulated such immense stocks it was a blessing that was never dreamt of by the most sanguine, as the superabundance of mining materials was at one time looked upon from a financial standpoint with some misgivings. The fact is that the mine controllers have always encouraged new ideas from every quarter, and in doing so it often happened that stocks became out of date and had to be held over until a favourable opportunity came to offload, and in time they were written down to zero, therefore on realisation it was mostly all to the good. The pooling scheme has only made itself felt during the past two months, which will not have made any appreciable difference to those firms carrying decent stocks, as the outside demands have been great from the Belgian Congo, Rhodesia, Natal coalfields, the coast ports, and in fact all over South Africa. The demands from the shipping and the docks have also been a feature, as on one occasion a ton weight of bolts had to be sent per passenger train to Capetown docks, which meant no inconsiderable expense for carriage. To assist the position, there have been quantities of second-hand mining material from dere-

lict mines and sorting-up lines coming forth from every nook and corner, wherever it could be unearthed to secure the temptingly high prices offering. Considerable relief also came from America and Canada, as regards steel plates, galvanised roofing and flat iron, etc., which has, however, been rather nipped in the bud, owing to the curtailment of shipping, which has been diverted to other routes owing to the war conditions. But arrangements are said to have been made to supply rather a large number of sailing ships to take the place of the ordinary liners.

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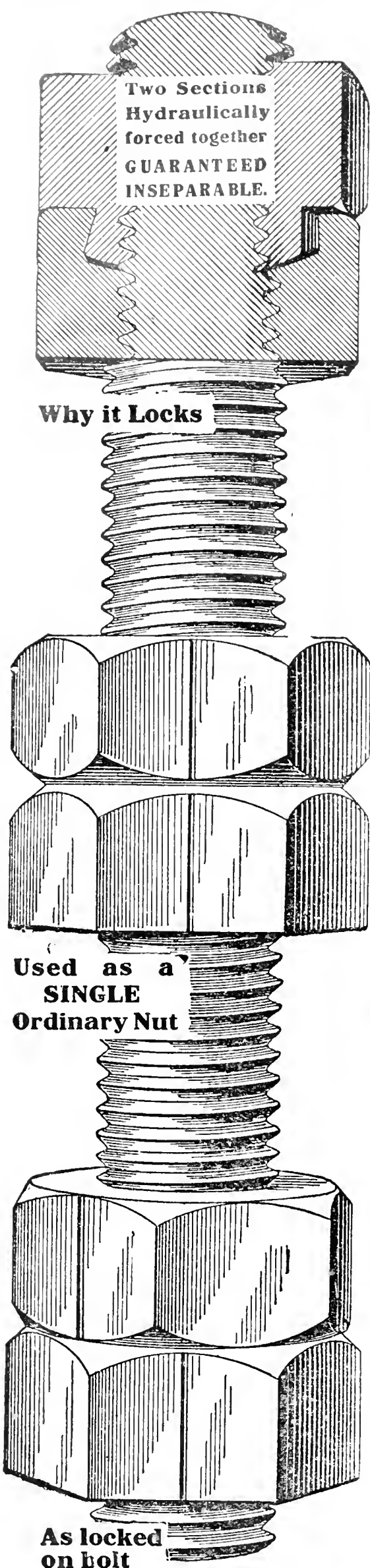
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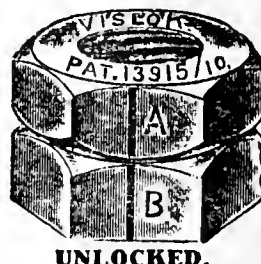
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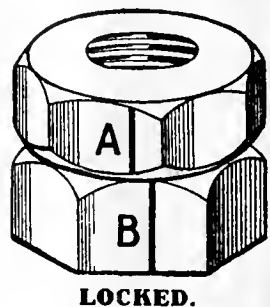
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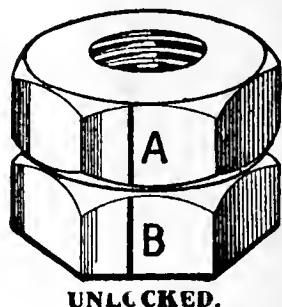
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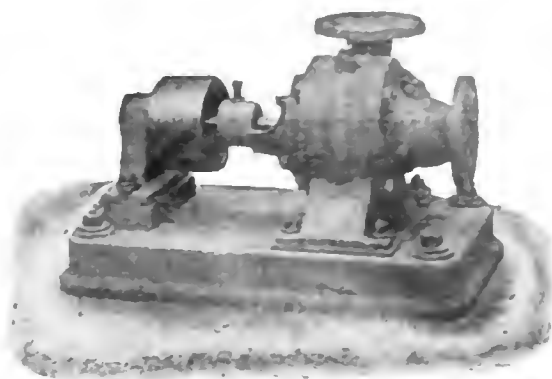
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potentialities will be unlimited. Already tram rails are being manufactured here as well as a number of steel castings, the latter requiring plenty of the imported pig iron to mix with the scrap. Even this scrap iron, which was in pre-war days so superabundant that the reef, from end to end, was so littered with it, that it seemed worthless, has now become so valuable that one of the conditions practically insisted upon by the foundries is that when new castings are required sufficient old scrap must be brought for the purpose. Although at times there have been acute shortages of all kinds of steel, more especially the higher-speed descriptions, yet these have dribbled through from Britain in sufficient time to save the position. An important ingredient in manufacturing high-speed steel is tungsten, most of which came from Austria, but fortunately this has been partially replaced by a discovery of this mineral in Upper Burmah. At another time there was an acute shortage of wire ropes, but with the assistance of the Chamber of Mines coupled with that of the British Minister of Munitions, constant supplies have now been arranged. Another important fact should not be omitted, and that is the assistance given by the local manufacture of bolts, which however created a sharp rise in British imported iron of the small varieties, but here again we recently obtained relief from Canada, as several consignments were received from there, thanks to the enterprise and perspicuity of our importers.

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Deals, which are the barometer of values in the timber market, were about 1s. per foot at the beginning of this year, but are now from 1s. 6d. to 1s. 7d., which is a big record price since the railway came to Johannesburg. The increase does not seem likely to stop either, as the general demand continues persistently, which was expected from

the mines but not from the building trade. As regards the latter there seems every likelihood of a further increase soon after the commencement of the coming year, so soon as the brick and tile makers can catch up the orders already on hand. Many plans have been passed by the Municipality for business improvements as well as those for private residences. The South African woods are quietly coming forward to assist the paucity in the overseas supplies, as since the introduction of tiles for roofing purposes as a substitute for galvanised roofing iron, the framework of the roofs need strengthening, and much is being done in this direction by alternate lengths of South African scantling, which make good substitutes when interlaced with the imported article. These scantlings, also imitation standard deals of 9 in. by 3 in., are sawn out of the heavier South African logs and by judicious selection take the place of a lot of Baltic timber. The mines also use fair quantities of these South African square logs for underground work and they also make good use of the South African cement for making propping pillars in the underground workings. Again, it is a common thing to see railway road hauling trucks piled up to overflowing with big fir trees, to be cut up into thin boards for packing case making and retainers for fruits and produce generally. The suitability and value of South African woods have been tested very much during the war period in the manufacture of furniture in Johannesburg. The various South African hard woods produce exquisite polishes and lend themselves to that stability and charm so requisite in the high-class furniture trade, so much so, that London orders were just becoming pronounced prior to the war. The mining pole trade has recently been very much upset, owing to the floods and washaways throughout the country making many of the roads for a time impassable, also in not a few cases the railways had to be temporarily suspended in consequence of

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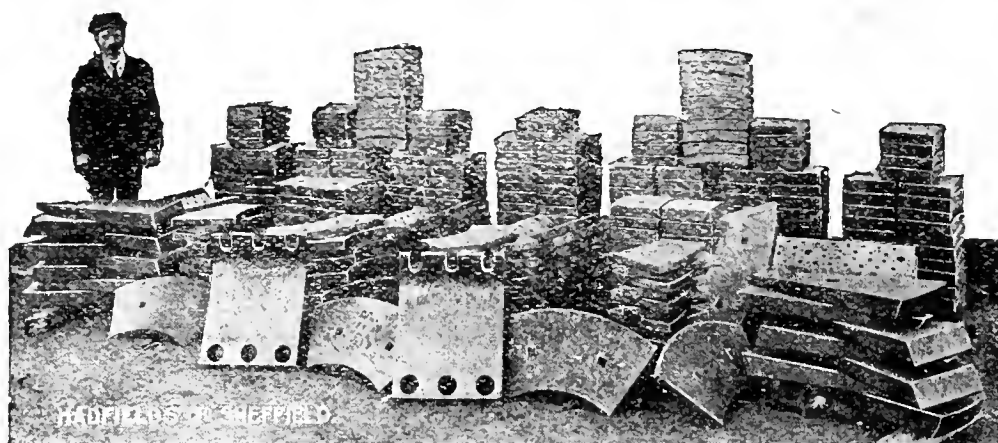
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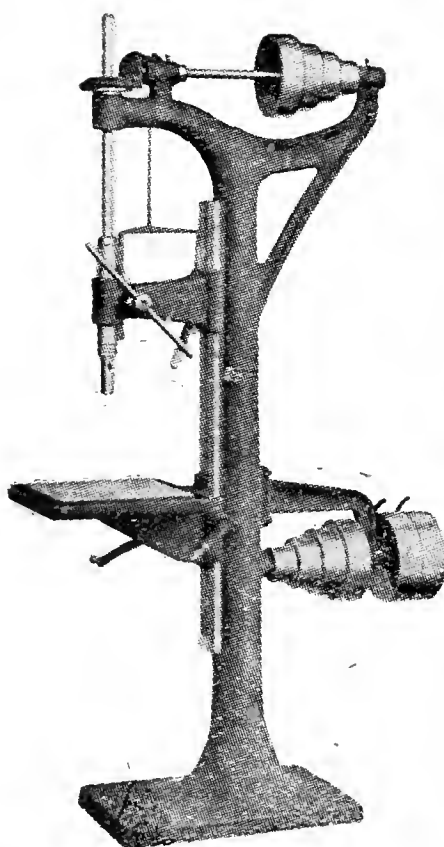
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the washaways of the track and embankments. The South African timber trade is very promising, yet it would seem that even the Government are concerned as to its future. From an everyday point of view it is one of the easiest methods possible for many of the farmers just to cut a few loads of timber and send them to Johannesburg and so obtain ready cash, and often without a second thought of replanting a similar number of trees to those cut down. To supply this deficiency, the Government has recently issued its annual circular in reference to their School of Forestry at Tokai plantation, Cape Peninsula. The aim of the school is to afford young South Africans an opportunity of qualifying as foresters and to assist foresters and others already in the service to become more proficient in their profession. The school is also designed to be of assistance to the sons of farmers and others desirous of acquiring a practical knowledge of forestry. All this is a step in the right direction, but it was not so long ago when arrangements were being made to obtain mining poles from Canada, therefore the assumption is that South Africa was not then too abundantly supplied, and as our mining industry as well as the Natal coalfields have such great mouths constantly asking for more and more, it behoves the Government to take positive steps, so that when trees are cut down, others should be planted in their stead. The wealth of South Africa is its gold and minerals, including diamonds, closely followed by its coal, not only for its own use but to supply the shipping and the greater part of the southern hemisphere. The third important asset is its agriculture, with the timber added, which must be destined not only to take second place but possibly to be paramount.

THE WAR FACTORIES.

The local manufactories have become the most important factors in assisting the mining industry. The foundry and engineering shops have surpassed expectations, as some

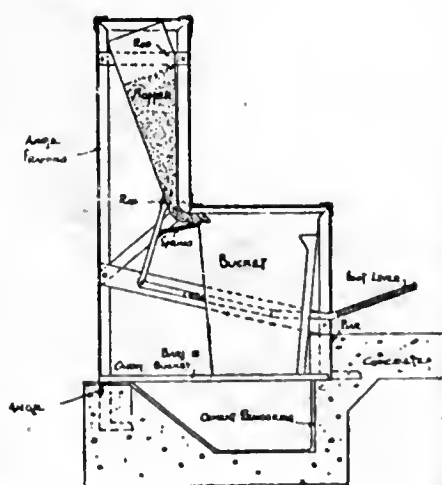
firms are manufacturing new machinery of a class never attempted in the country before. Castings are now being made locally which were never thought could be approached in normal times, but the high wages and constant employment have been the means of collecting large numbers of expert mechanics, perhaps better than ever employed in the Johannesburg workshops before. Then there are grease and chemical factories, soldering compounds, boiler cleansing fluids, rope and belting dressings, and so forth. A factory was started a short while ago at Germiston for making carbide, and another more recently at Hatherley for manufacturing white lead. There is also a display of pure tin from the Zaalplaats mine in town, as well as ingots of copper from the Belgian Congo. The exploitation of sulphur, antimony, asbestos, and such like are coming within the pale of practical commercialism, as compared with the various experimental stages. The war has done and is doing wonders for South Africa notwithstanding the croakers. The prospects are great and there is much more to be done.

Friday, December 28, 1917.

This has been a holiday week and many of the merchants and members have not yet put in an appearance at the Commercial Exchange. So far there have been a few indents put out for trivial items; however, something better is expected after the New Year holiday. By the way, the retail places in town may have two holidays at the New Year, viz., January 1st and 2nd, but so far the Commercial Exchange has not altered its decree of January 1st only. The only features to record are a rise of a penny per foot for deals since last week and a penny per lb. in linseed oil putty. The standardisation committee will resume its labour after the New Year. Apparently they are getting along rather slowly, which is not surprising, seeing the immense technical difficulties there are to contend against. To catch up some of the leeway, the brickyards kept at

Improved Sanitation Underground on the Rand.

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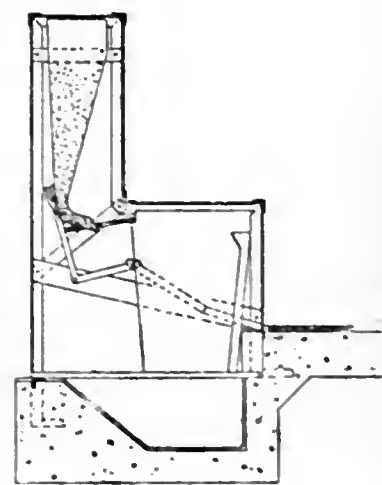
SECTION showing Hopper and Gearing in position of rest, or immediately after foot lever has been released.

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SECTION showing Hopper and Gearing in position while in use.

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work throughout the holidays. According to the information available, the Commercial Exchange is about level as regards members when compared with a year ago. It is stated that a few left owing to various circumstances, and nearly the same number of new ones joined.

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BUILDING MATERIALS.—Timber: Deals, Baltic, 9 x 3, 1s. 6d. to 1s. 7d.; flooring, 4½ x 7 and 6 x 5, 9½d. to 9¾d. per square foot; flooring, 4½ x 1½, 9½d.; and 6 x 1½, 9½d.; ceilings, 6 x ½, 5½d. to 5¾d. per square foot; pitch pine, 8s. 6d. per cubic foot; Oregon, 7s. per cubic foot; clear pine, ½ in. x 12 in., 1s. 1d. per foot; 1 in. x 12 in., 1s. 5d.; teak, 16s. 6d. to 17s. 6d. cubic foot; shelving, 1s.; jarrah, 12s. 6d. c. ft.; poplar, 1 in. x 12 in., 1s. 3d.; scantling, 1s. 5½d. to 1s. 6½d. ft.; beaver boards, 6d.; galvanised iron, 24-gauge, 6ft. to 10ft., 2s.; 11ft., 2s. 1d.; 12ft., 2s. 2d.; 26-gauge, 6ft. to 8ft., 1s. 8d.; 9ft. and 10ft., 1s. 8d.; flat galvanised, 24-gauge and 26-gauge, 12s. 100 lbs.; floor brads, 52s. 6d.; ceiling, 47s. 6d.; wire nails, 47s. 6d. to 55s. per 100lb.; locks, rim, 66s.; mortice, 70s. per dozen; steel ceilings, 75s. to 80s.; roofing material, 1 ply, 40s.; 2 ply, 47s. 6d.; and 3 ply, 57s. 6d. per roll.

BRICKS, CEMENT, LIME, ETC.—Pretoria Portland Cement, 9s. 3d. bag; 8s. 3d. truck loads; lime, white, unslaked, 7s.; truck loads, 6s.; slaked, do., 5s.; blue, 3s. 9d.; plaster lime, 4s. 6d.; bricks, stock, delivered, 60s. to 65s.; wire cuts, 60s. to 75s.; pressed, 70s. to 80s. per 1,000; road transport difficult to obtain; salt and white glazed bricks, £35 per 1,000; roofing tiles, £17½ to £27½ per 1,000; glazed tiles, 10s. 6d. to 17s. 6d. per yard; paving cement tiles, 8s. 6d. per yard laid; reinforced concrete columns, 6 ft. plain, 22s. 6d.; fluted, 24s.; fireclay bricks, £7½ to £9½, at kiln, per 1,000; clay chimney pots, 36s. to 70s., according to height, 12 in. to 18 in., per dozen.

OILS, PAINTS, LEAD, OXIDE, GLASS.—Linseed, raw and boiled, 13s. per gallon; white lead, 1s. 3d. per lb. and 1s. 1d. in big lots; turpentine, 65s. 2/4 1-5 gallons; 10/1 5-6 Imperial tins, 70s.; oxide in oil, 45s. per 100lb.; dry oxide, 16s. to 27s. 6d.; linseed oil putty, 8d. per lb.; paints in tins, 1s. 1d. to 1s. 3d. lb.; British plateglass, ½ in., 5s. 6d. to 6s.; do., mirror, 6s.; window, 16oz., 1s. to 1s. 3d. per foot.

GREASE.—Imported, A.F. axle, £30 to £32½; local, £24 to £26 per ton; tallow (local), 6d. per lb.; White Rose paraffin, 19s. 4d. 2/4; Laurel paraffin, 19s. 1d.; petrol, 35s. 6d. to 36s. 6d. 2/4 I.M.P.; motor oil, 7s. to 7s. 6d. per gallon; engine lubricating oils, 30s. to 40s. per case; cylinder, 30s. to 42s. 6d.

CHEMICALS.—Mercury, £55 to £60 75lb. bottle last sale, but now no definite price; bichromate potash, 5s. 6d. lb.; chlorate, 4s. 6d. per lb.; permanganate, 14s. lb.; alum, 6d. lb.; carbolic acid, 7s. 6d. lb.; borax, 100s. 100lbs.; cyanide sodium, 1s. 3½d. to 1s. 5d. lb.; hypo, 9d. lb.; acetate lead, 77s. 6d. 100lbs.; litharge (assay), 70s. to 72s. 6d. (commercial), 58s. 6d. 100lbs.; zinc sheets and blocks, 1s. 9d. lb.; locally-smelted zinc, 6½d. lb.; plumbago crucibles, 5d. per number.

ELECTRICAL GOODS.—Lamps, high volts, British, Holland and American, 30s. to 36s. wholesale, and 48s. to 54s. doz. retail; carbon lamps, 12s. 6d. doz.; pure rubber flex, 6d. to 8d. yd.; 3/20 coils wire, 42s. 6d. to 45s.; do., 3/22, 25s.; 7/22, 48s.; 7/20, 75s.; 7/18, 85s.; tubing, 18s. to 20s. per 100 ft.; keyholders, 6s. to 7s. 6d. each; round blocks, 3½ in., 4s. dozen; lamp holder cord grips, 13s. 6d. to 15s. per dozen; switches, 5 amp., 42s. to 48s. per dozen; British glass shades, 30s. to 40s. dozen; porcelain shackles, 15s. to 18s. dozen; do., bobbins, 15s. to 25s. per 100; cleats, 22s. per 100; P.O. insulators, 18s.; motor, 3 h.p., about £35 to £37, new.

IRON.—Imported, ¼ in. and ½ in. round, 9d. to 10d. lb.; ½ in. round, 72s. 6d. to 75s. 100lb.; ¾ in. round, 47s. 6d. to 50s. 100lb.; 1 in. upwards, round, 32s. 6d. to 40s. per 100lb.; square iron, 35s. 100lb.; flat iron, small shoeing sizes, 45s. to 50s.; flat, average width and thickness, 32s. 6d. to 40s.; round iron, local ¼ in. upwards, 32s. 6d. per 100lb.; square iron, local, ¾ in. upwards, 25s. 6d. per 100lb.; flat iron, average widths and thickness, 25s. 6d.; mild steel bar, 6½d. to 9d. per lb.; drill, 10d. to 1s. per lb.; steel plates, 70s. to 80s.; some sizes unobtainable; hexagon and cuphead bolts, ¼ in. diameter, 2s. per lb.; 5-16 in. diameter, 1s. 9d. per lb.; ¾ in. diameter up to 3 in. long, 1s. 6d. lb.; ¾ in. dia., 1½ in., 3½ in. and up long, 1s. lb.; ½ in. dia. up to 2½ in. long, 70s. 100lb.; ½ in. dia. and 2½ in. up long, 70s. per 100lb.; ¾ in. diameter up to 2½ in. long, 57s. 6d. per 100lb.; ¾ in. dia., 2½ in. and up long, 55s. per 100lb.; ¾ in. diameter, 2½ in. and up long, 50s. 100 lbs.; ¾ in. and 1 in. dia., same price as ¾ in. diameter; nuts, ¾ in., 1s. 3d. per lb.; ½ in., 82s. 6d.; ¾ in. to 1½ in., 75s.; 1½ in. and 1½ in., 85s.; 1½ in. to 1¾ in., 87s. 6d.; 2 in. up, 72s. 6d.; washers, all sizes, 45s.; rivets, 3-16 in., 1s. 6d. lb.; ¼ in., 5-16 in., 1s. 6d. lb.; 7-16 in., ¾ in., 1s. lb.; ½ in., 1s. lb.; ¾ in., 62s. 6d.; ¾ in. up, 59s. 100 lb.; shoes and dies, 32s. 6d. to 35s., 100lb.; rails, £25 per ton; picks, 4lb., 40s. per doz.; shovels, 65s. to 70s. per doz.; drill hammers, 5½d. to 6d. per lb.; hammer handles (best American), 14in., 3s. 6d.; 24in., 7s.; 30in., 9s. 6d.; 36in., 13s. per dozen; metal, anti-friction knoxite, 10d. to 3s. 6d. per lb.

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